

How to Apply
Johns-Manville
RIGID ASBESTOS
SHINGLES



Johns-Manville
CORPORATION

How to Apply
Johns-Manville
**RIGID ASBESTOS
SHINGLES**



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CORPORATION

New York Cleveland Chicago
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TOOLS—HANDLING
SHINGLES

PREPARING ROOF
OR SIDE WALL

ROOFING—
AMERICAN METHOD

ROOFING—
HEXAGONAL METHOD

ROOFING—DUTCH
LAP METHOD

SIDING

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Roofs of J-M Asbestos Shingles are easy to lay—

TO lay a roof of Johns-Manville Rigid Asbestos Shingles and to do it well is a very simple matter. The shingles are cut to exact sizes with nail holes punched in the proper places. The fact that they are made of Asbestos and Cement does not make them difficult to handle.

This book shows how to lay Johns-Manville Rigid Asbestos Shingles, giving detailed instructions for all styles of shingles under all conditions. These instructions are not the ideas of men who have never used a hammer but are all based on actual experience and have been found to be the best and the easiest ways of applying roofs properly with these shingles.

J-M Rigid Asbestos Shingles are as easy to handle as ordinary wooden shingles.



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Chapter I

Johns-Manville Rigid Asbestos Shingles

Roofs for every House—Large or Small

Johns-Manville Rigid Asbestos Shingles are made of Asbestos fibre and Portland cement united under tremendous pressure into tough, everlasting, fire-proof shingles.

Permanent and Fire-proof

Asbestos and Portland cement are two of the most permanent materials known. Neither of them can rot, rust or corrode, neither of them can burn and each is unaffected by time or weather. Asbestos shingles, therefore, are fire-proof and weather-proof.

Colors

These shingles are made in attractive colors to meet the modern trend—solid colors where solid colors are most fitting, reds, greens, grays, browns, and blends of great beauty—these colors can be combined in every variety to harmonize perfectly with every type of architecture.

Texture

Johns-Manville Asbestos Shingles are finished in various textures, both smooth and rough in solid colors as well as mottled surfaces.

Styles

Johns-Manville Rigid Asbestos Shingles are made in the American method shingles, the Hexagonal method and the Dutch Lap method. Methods of laying these different types of shingles will be treated in detail and fully illustrated under various chapter heads.

In addition to these different types of shingles, Johns-Manville manufactures the necessary fittings, such as eave starters, ridge and hip shingles, etc., so that there are no complicated fittings to be bought from someone else.

These shingles are to be laid on pitched roofs only; never on flat deck roofs or roofs with very low pitch. The minimum slope for American Shingles is 4" per foot; for Hexagonal Shingles, 5" per foot and for Dutch Lap Shingles, 5" per foot.

These shingles are not limited to new or re-roofing work alone but can be used for both roofing and siding. Where they are used for re-roofing they can be laid directly over the present shingles thus saving the home owner the inconvenience and expense of tearing off the old roof.



American Method



Hexagonal Method



Dutch Lap Method

Chapter II

Tools and Handling Shingles

No special tools are required to lay a roof of Johns-Manville Rigid Asbestos Shingles. Use the same ones you would use with any other shingle roofing. A small hatchet will usually be found more convenient than a hammer. In addition to this a sharpened nail set or prick punch will be found very useful both in punching new holes in shingles which have been cut and also in scoring shingles for breaking them as is shown in Figure 1. A ripper similar to that shown in Figures 24 and 33 will be found valuable in removing broken shingles.

Roof Brackets

In laying a roof of Asbestos Shingles, roof scaffold brackets are recommended. It is not possible to nail cleats on the finished roof, as is usually done with wood shingles, since nails must not be driven through the finished roof.

Everyone is familiar with the small home-made type of triangular wood roof bracket which has at its upper end a thin strip of sheet metal, which is nailed to the roof to hold the bracket. When the roof is finished, these brackets are removed by simply cutting off the sheet metal strip at the edge of the shingles and leaving part of it in place. While this is a very simple and effective way of scaffolding, the piece of sheet metal which is left will thereby make unsightly spots on the finished roof.

A ready-made scaffolding bracket is shown in Figure 2. The extension is nailed to the roof through the hooked slots and the shingles are laid right over it as shown in Figure 3. When the job is finished this bracket is removed by simply sliding it up to disengage it from the nails, then pulling it out from between the rows of shingles. There are several similar types of brackets on the

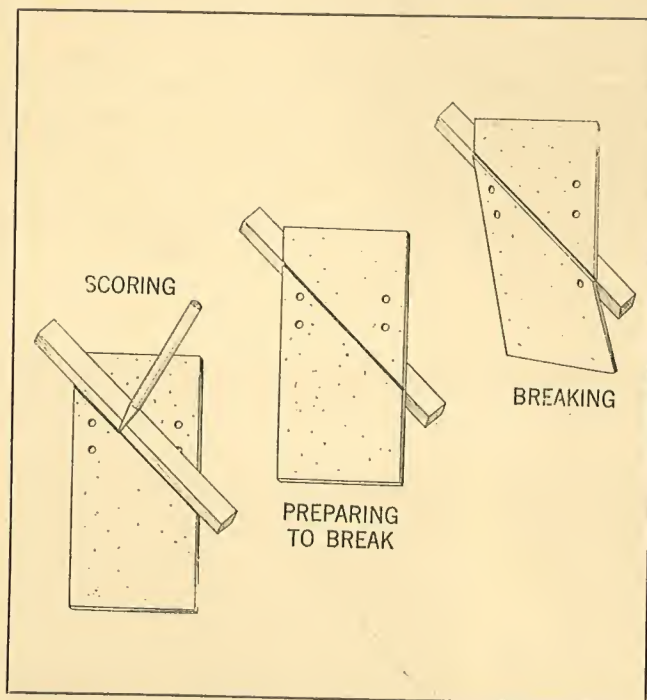


Figure 1—Cut shingles by scoring and then breaking over any sharp edged surface

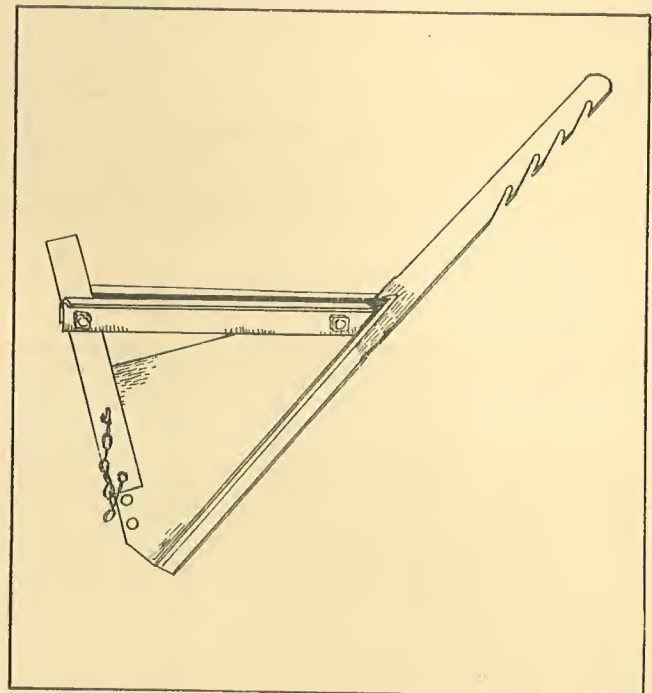


Figure 2—Roof bracket recommended for use when laying J-M Asbestos Shingles

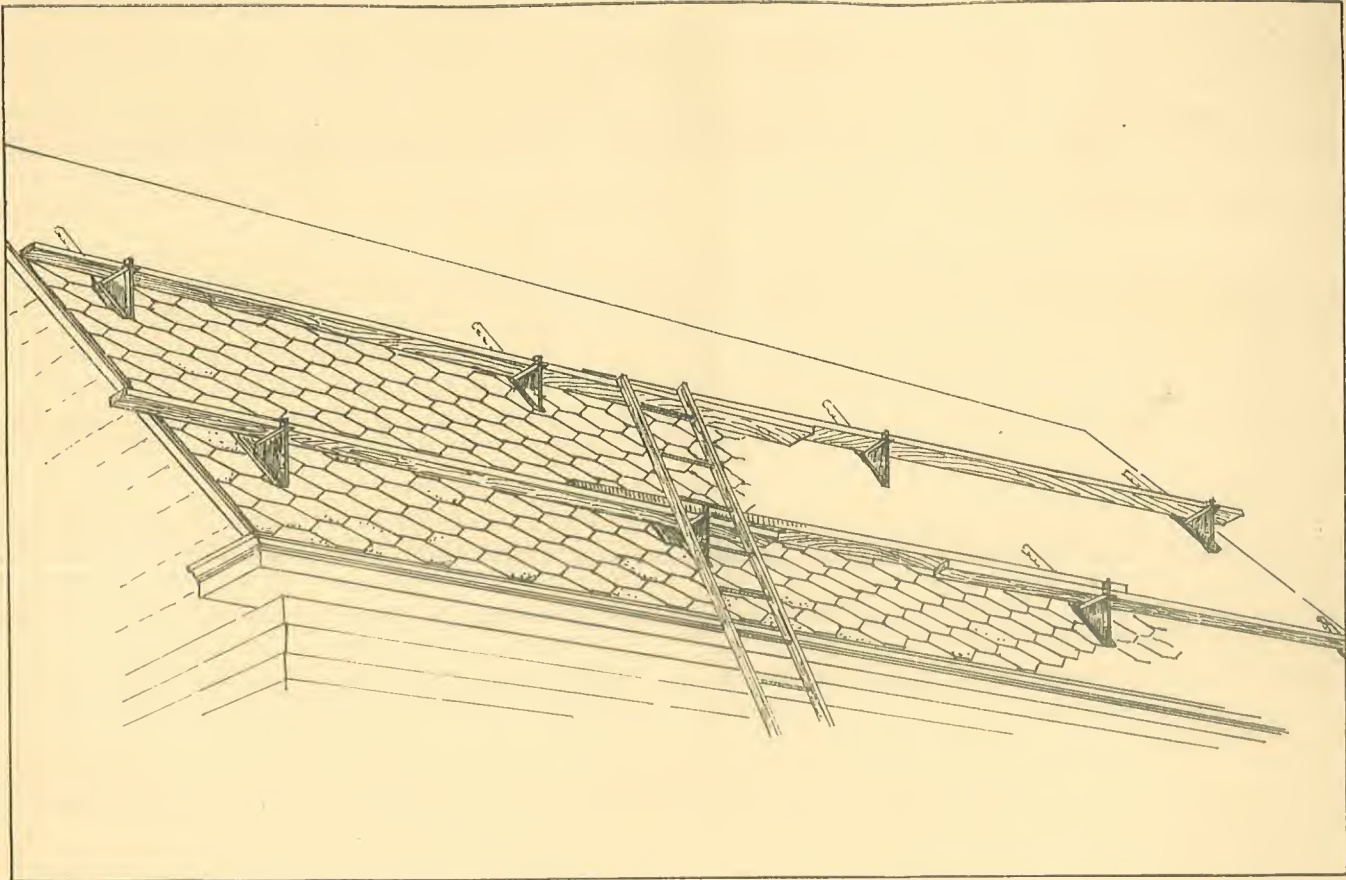


Figure 3—Showing use of roof brackets

market, though the one shown here can usually be secured through the Johns-Manville dealers.

Cutting and Punching Shingles

Figure 4 shows a machine for cutting shingles. We recommend its use because it will save a considerable amount of time and is very simple to operate. This shingle cutter has a set screw at the end where the two jaws are hinged together, so that the knives can be spaced at the proper distance for cutting any thickness of shingle, either uniform or tapered. In addition to this, the machine is equipped for punching nail holes.

If there is no shingle cutter on the job, the shingles can be cut as shown in Figure 1. Lay a piece of wood as a straight edge along the line where the shingle is to be cut and score the shingle slightly with a sharpened nail set or prick punch. Then lay the shingle on top of the wood with the scored line over the edge,

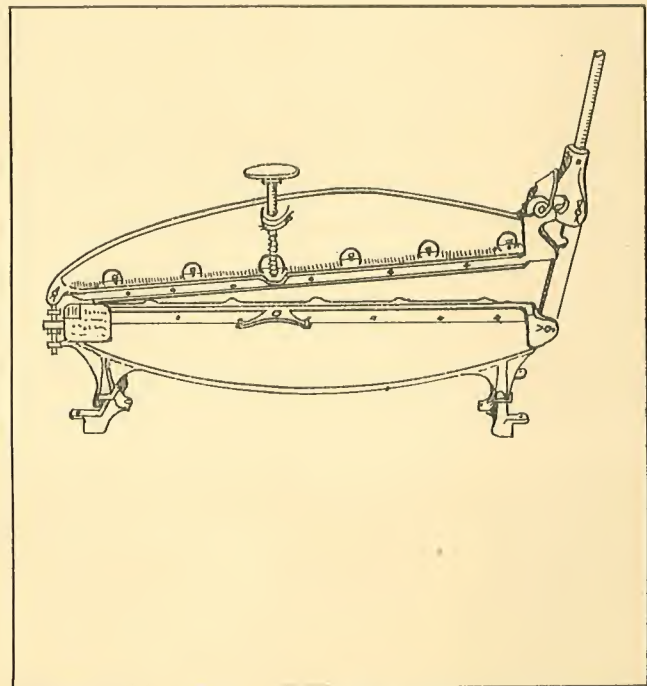


Figure 4—Asbestos shingle cutter

TOOLS—HANDLING SHINGLES

PREPARING ROOF OR SIDE WALL

ROOFING—AMERICAN METHOD

ROOFING—HEXAGONAL METHOD

ROOFING—DUTCH LAP METHOD

SIDING

hold one side firmly, strike the other a sharp blow with the hand and the shingle will then break along the scored line.

Each shingle must be fastened with two nails and if in cutting a shingle there is only one nail hole left, a new one must be punched, using the punching device on the shingle cutter or driving through the sharpened nail set, first placing the shingle on a smooth, firm surface.

Circular or angular cuts can be made by punching a succession of holes along the line to be cut using the same tools.

Handling Shingles

When Rigid Asbestos Shingles are delivered at the job they should be carefully stacked on end on planks off the ground and covered with water-proof paper to prevent them from becoming stained and streaked.

When working on roofs where different colors are blended, it will be found of great assistance if the shingles are taken to the roof as required in the color proportions in which they are to be used.

Nails

In applying Johns-Manville Rigid Asbestos Shingles on new work, use nails at least $1\frac{1}{4}$ " long, for re-roofing and re-siding work use nails at least 2" long. Use either copper shingle nails or galvanized iron needle pointed nails as furnished by Johns-Manville dealers. It is false economy to lay a roof of Rigid Asbestos Shingles with any other type of nail. Always use copper nails in fastening the ridge roll sections where the nails are driven through the copper ridge roll clip.

In nailing shingles, drive the nails just flush with the shingle. Do not try to drive the nail home.

Chapter III

Preparation of Roof or Side Wall

Roofing

One of the most important points in roofing and one which is frequently overlooked, is the need of having the roof surface in proper condition before the roofing is laid. On new work, we recommend that the contractor inspect the roof surface carefully before he starts his work and report to the general contractor or the architect anything which he finds is not correct. This is a protection to the contractor—for many otherwise good roofing jobs have been failures because the

sheathing was in poor condition or was not properly laid.

The sheathing should be thoroughly dried lumber and the use of narrow boards—tongued and grooved—is recommended. These boards should be securely nailed with two nails to each rafter and the nailheads must be driven flush with the surface. All end joints should be made over a rafter. Any scraps or loose nails should be removed and the whole area cleaned off, before the roofing work is started. Do not start laying Asbestos

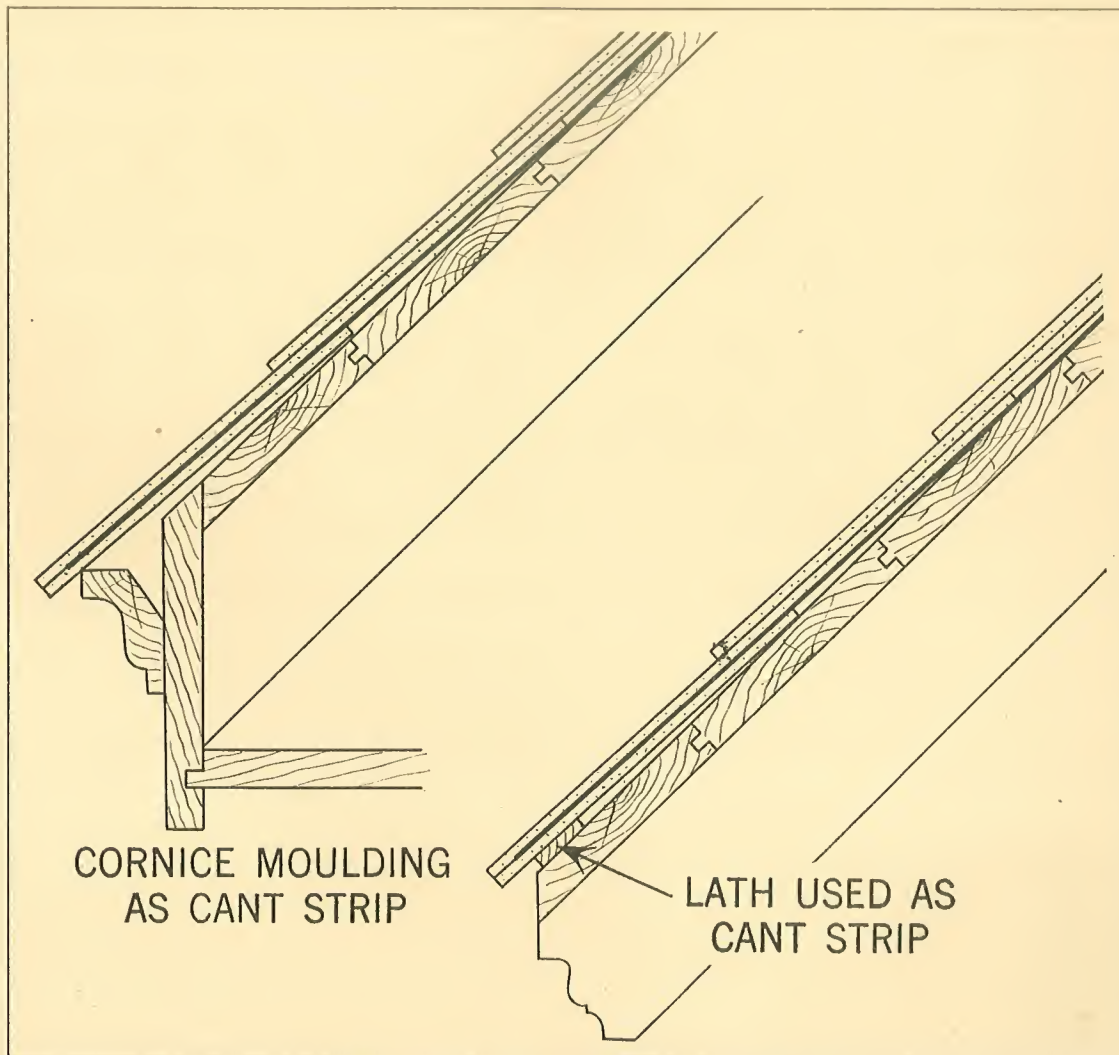


Figure 5—Eaves details showing use of cant strip

PREPARING ROOF OR SIDE WALL

ROOFING—AMERICAN METHOD

ROOFING—HEXAGONAL METHOD

ROOFING—DUTCH LAP METHOD

SIDING

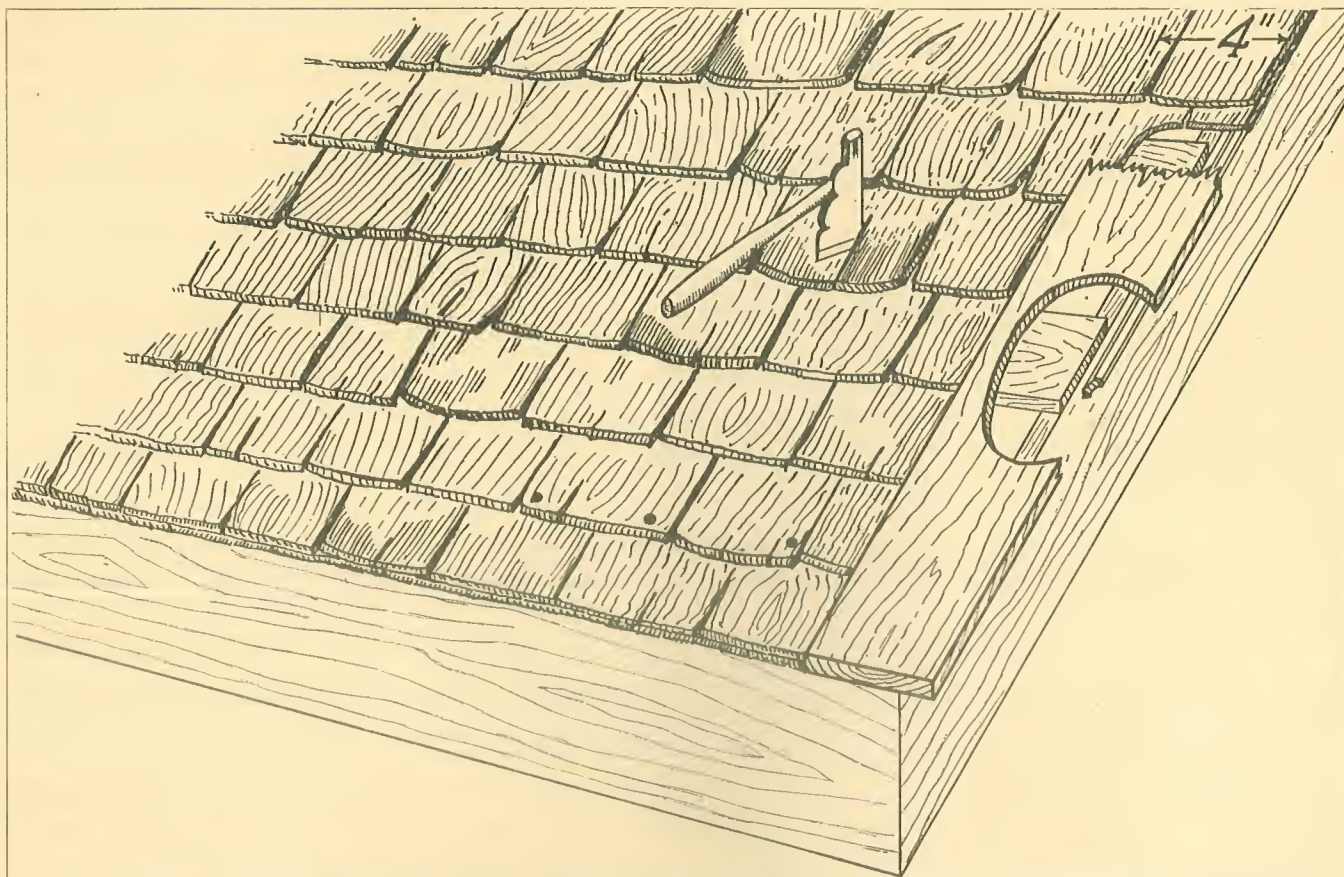


Figure 6—In preparing old roof for re-roofing split warped shingles with a hatchet and nail them down. Lay new gable strip

Shingles, or in fact any other roofing, when the sheathing is wet or damp.

Before laying the Asbestos Shingles on new work, the surface shall be covered with Johns-Manville Asbestos Roofing Felt—15 pound or heavier—lapping it horizontally about 4", lapping it 12" over ridges, hips and valleys, and nailing it through strips of lath.

To get the proper "cant" to the shingles at the eaves, either nail a cant strip at the eaves, or extend the cornice moulding to act as a cant (see Figure 5).

Re-roofing

On re-roofing jobs the use of felt is unnecessary and the preparation of the roof surface is naturally different. Figure 6 shows how the roof proper and the gable edge is prepared. Loose shingles should be nailed, warped shingles should be split and nailed and any shingles which have fallen out should be replaced. A 4" to 6" strip of the old shingles is cut away from the gable edge and

new lumber set in. This lumber must be thick enough to be the same height as the butts of the old shingles.

Figure 7 shows how old valleys are filled in to bring them to the same level as the old roof.

Figure 8 shows how old hip and ridge finish must be removed and, where required, a furring strip set to take care of the ridge and hip finish; one strip for Ridge Roll—two strips for Boston Ridge or Hip Finish.

Siding

Johns-Manville Rigid Asbestos Shingles are equally good for siding. Sheathing for siding should be the same as that specified for roofing and the contractor should examine it carefully to see that it is in proper shape. Before laying the shingles, cover the surface with Johns-Manville Asbestos Roofing Felt—15 pound or heavier—and then proceed with the laying of the shingles.

Re-siding

On re-siding jobs the preparation of the surface is different. Any finish on inside or outside corners which projects beyond the old siding, must be removed and new strips set in to bring these points level with the old siding (see Figure 9). If it is desired to leave such corner strips in place, the new siding may be applied to finish against them, applying a moulding for this purpose if required, similar to that shown in Figure 12. At the frieze there are two methods which may be followed. Either remove the old frieze moulding and reset it after the Asbestos

Shingles have been laid, or lay the Asbestos Shingles flush with the old frieze and cover the joint with a moulding of the proper size. See Figure 10.

When the old water table is wide enough, follow the construction shown in Figure 11. When it is too narrow, the butts of the lower row of Asbestos Shingles can be extended slightly below the water table and become themselves, the new water table. This method has an additional advantage because the old water table will give the proper cant to the shingles and a cant strip is not needed. Where necessary, window and door openings are taken care of as shown in Figures 9 and 12.

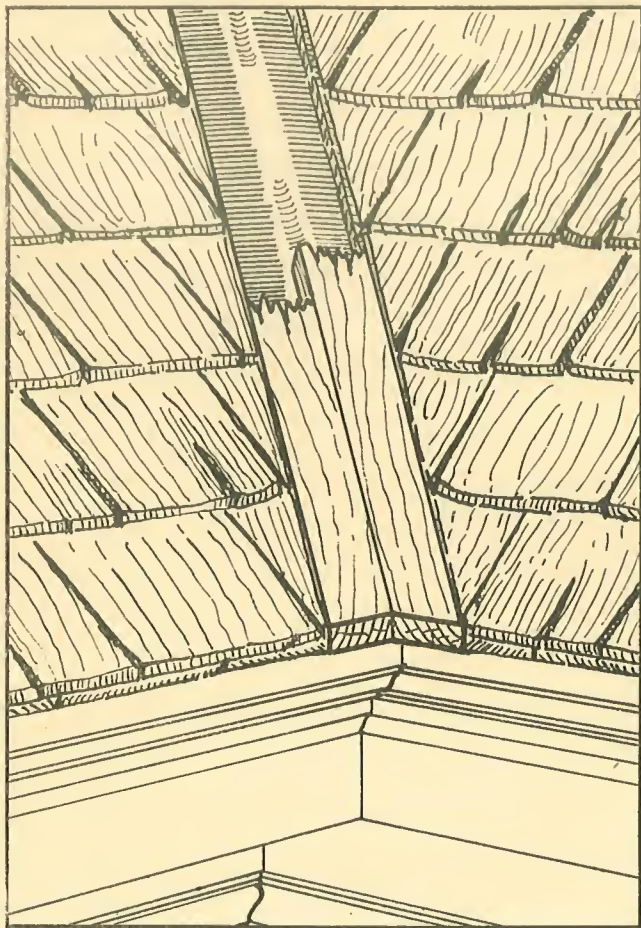


Figure 7—Showing method of filling in old valley

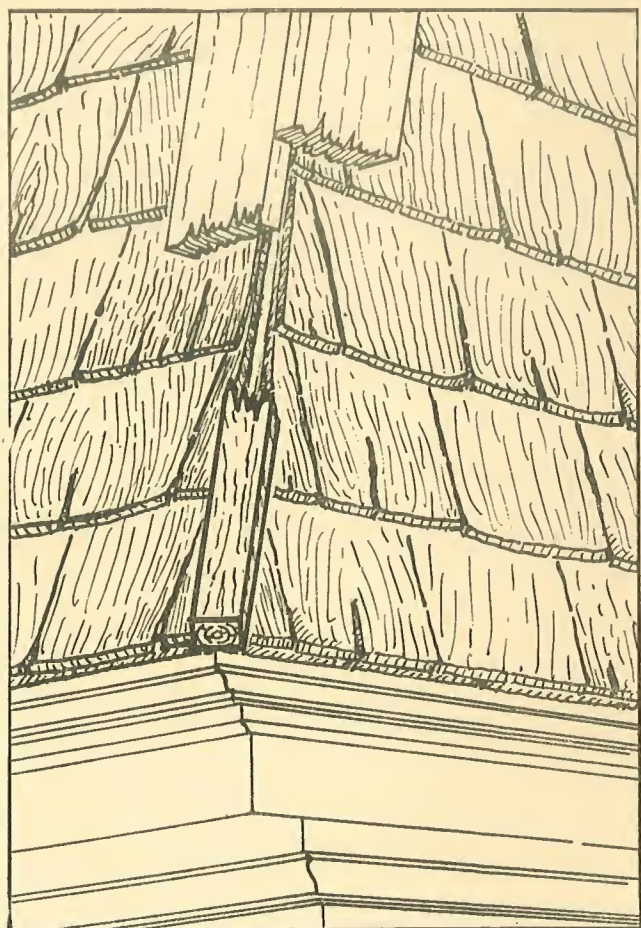


Figure 8—Showing furring strips on old hip or ridge

SIDING
 ROOFING—DUTCH
 LAP METHOD
 ROOFING—
 HEXAGONAL METHOD
 ROOFING—
 AMERICAN METHOD

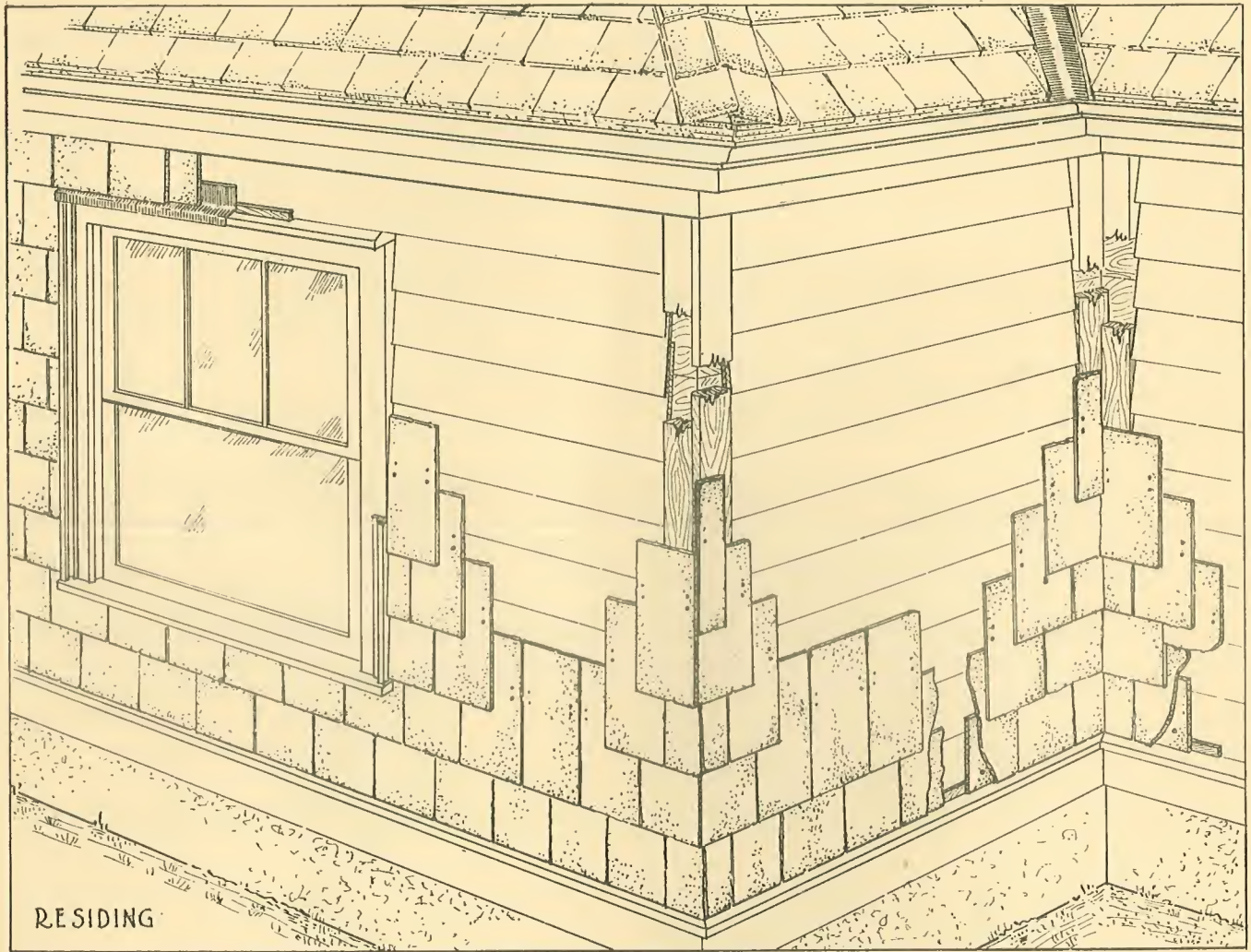


Figure 9—Re-siding by the American Method—showing inside and outside corner and detail around window

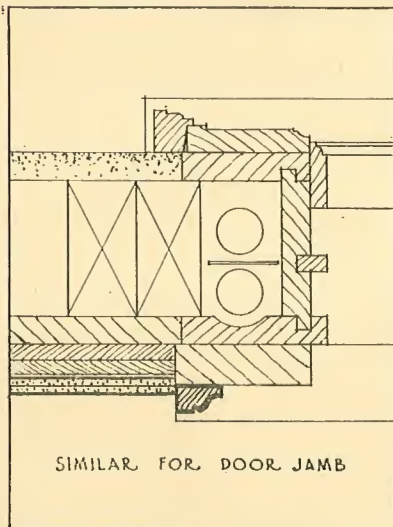


Figure 12—Detail at window jamb

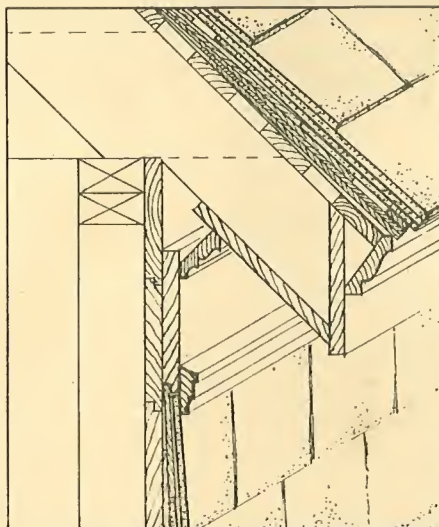


Figure 10—Detail at top of wall

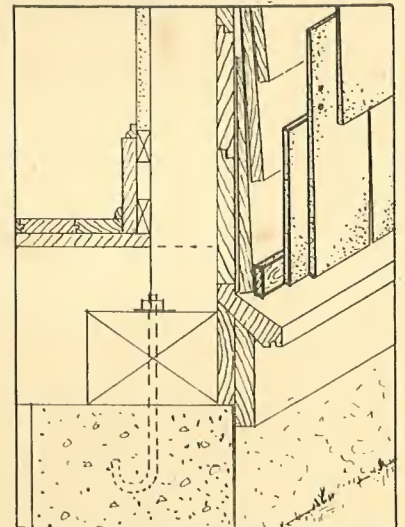


Figure 11—Detail at water table

Chapter IV

Roofing—American Method Shingles

Before laying shingles, cover the roof surface with Johns-Manville Asbestos Roofing Felt. Lift up the edge of the roofing felt at the eaves and nail the eaves starters with two nails to the sheathing with the long dimension parallel to the eaves and with the lower edge extending 1" beyond the eaves and 1" beyond the gable. Where no special eaves starters are provided apply the main body shingles as starters, cutting off the leads to reduce the length to two inches greater than the weather exposure. Apply with the long

dimension at right angles to the eaves. After these eaves starters are in place drop the felt over them and then proceed to lay the main roof shingles. The first course of main roof shingles is laid to completely cover and break joints with the eaves starters and each successive course of shingles breaks joints with the one below. All American Method shingles shall be laid with a minimum head-lap of 2". See Figure 13.

NOTE: When using random width shingles, always have not less than three inches horizontally between the vertical joints in successive courses.



Figure 13—Showing Method of laying American Shingles with even butts

ROOFING—AMERICAN METHOD

ROOFING—HEXAGONAL METHOD

ROOFING—DUTCH LAP METHOD

SIDING

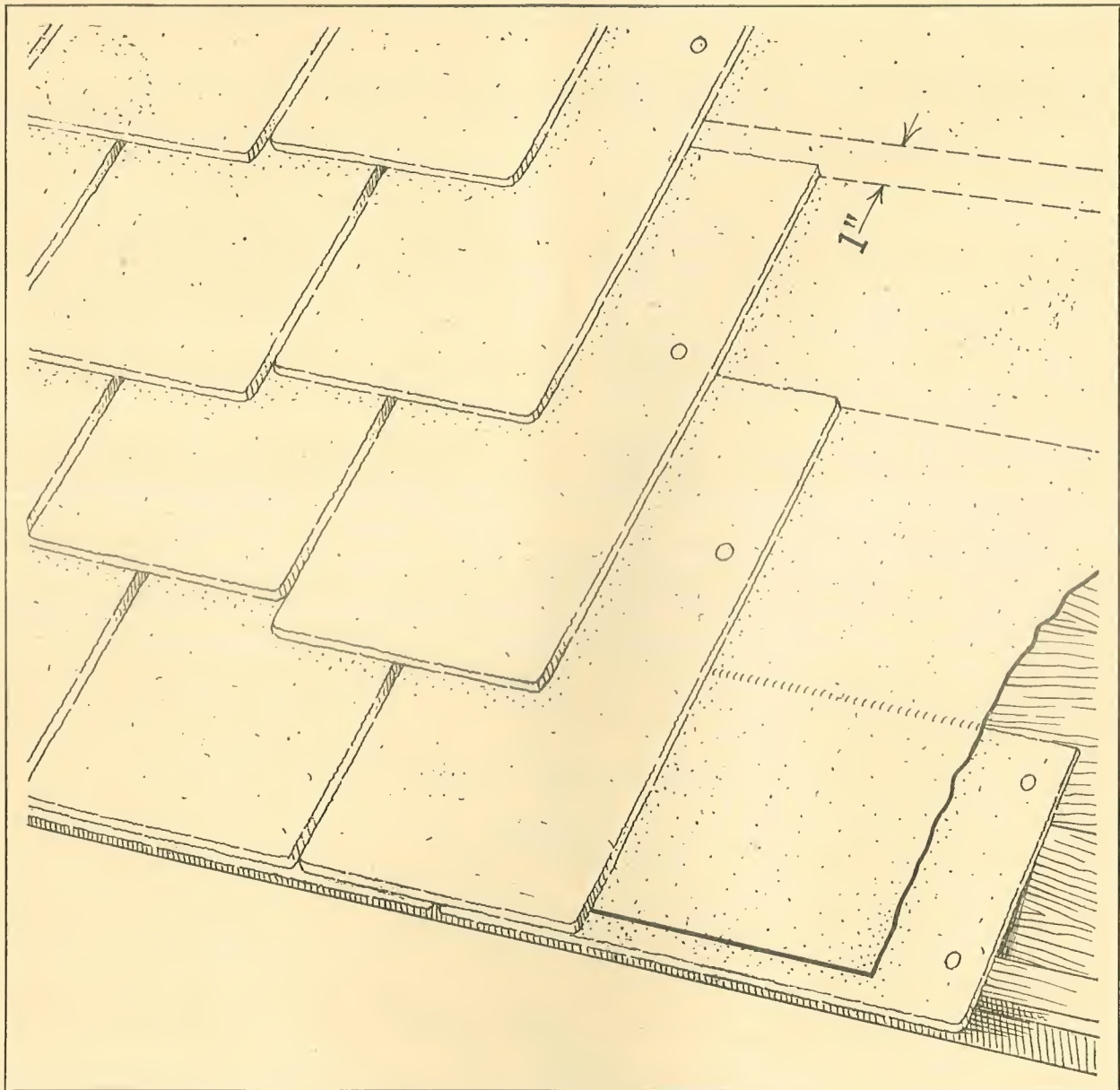


Figure 14—Showing method of laying American Shingles with staggered butts

Roofing—Even Butts

The different types of American Method Asbestos Shingles give the contractor an opportunity of laying three different styles of roof. Figure 13 shows the roof with the butts aligned; the usual method. In this case, horizontal chalk lines are snapped on the roof at intervals equal to the weather exposure of the shingles and serve as guide lines for laying the heads of the shingles of successive courses.

Roofing—Staggered Butts

Figure 14 shows a roof laid with butts staggered. The striking of the chalk lines for this type of roof is shown; the spacing center to center of each pair of lines to be $\frac{1}{2}$ " less than the standard weather exposure of the shingle used. The upper end of the shingles in each course shall lay on or between the two chalk lines thereby insuring a 2" minimum head lap. By varying the weather

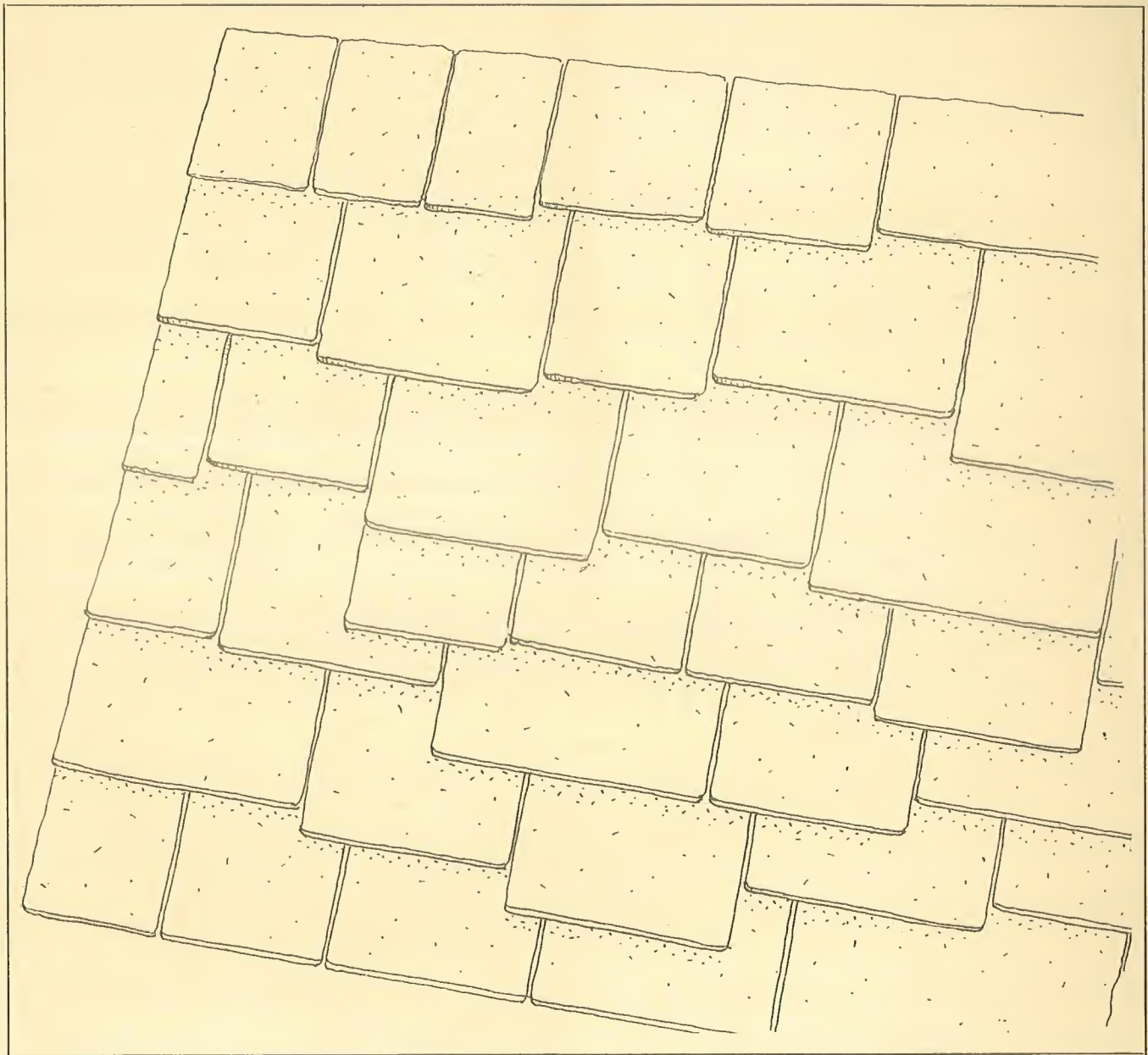


Figure 15—Showing method of laying American Shingles of random widths

exposure of the shingles and avoiding any regularity in this manner, a most pleasing roof effect is obtained.

Roofing—Random Widths

Figure 15 shows the appearance of a textural roof. This roof is extremely irregular.

There are two points which are of greatest importance, and which must never be overlooked. First: each individual shingle in each course must have not less than 2" head lap. Second: in laying the random width shingles be sure that there is at least three inches horizontally between vertical joints in successive courses.

ROOFING—
HEXAGONAL METHOD

ROOFING—DUTCH
LAP METHOD

SIDING

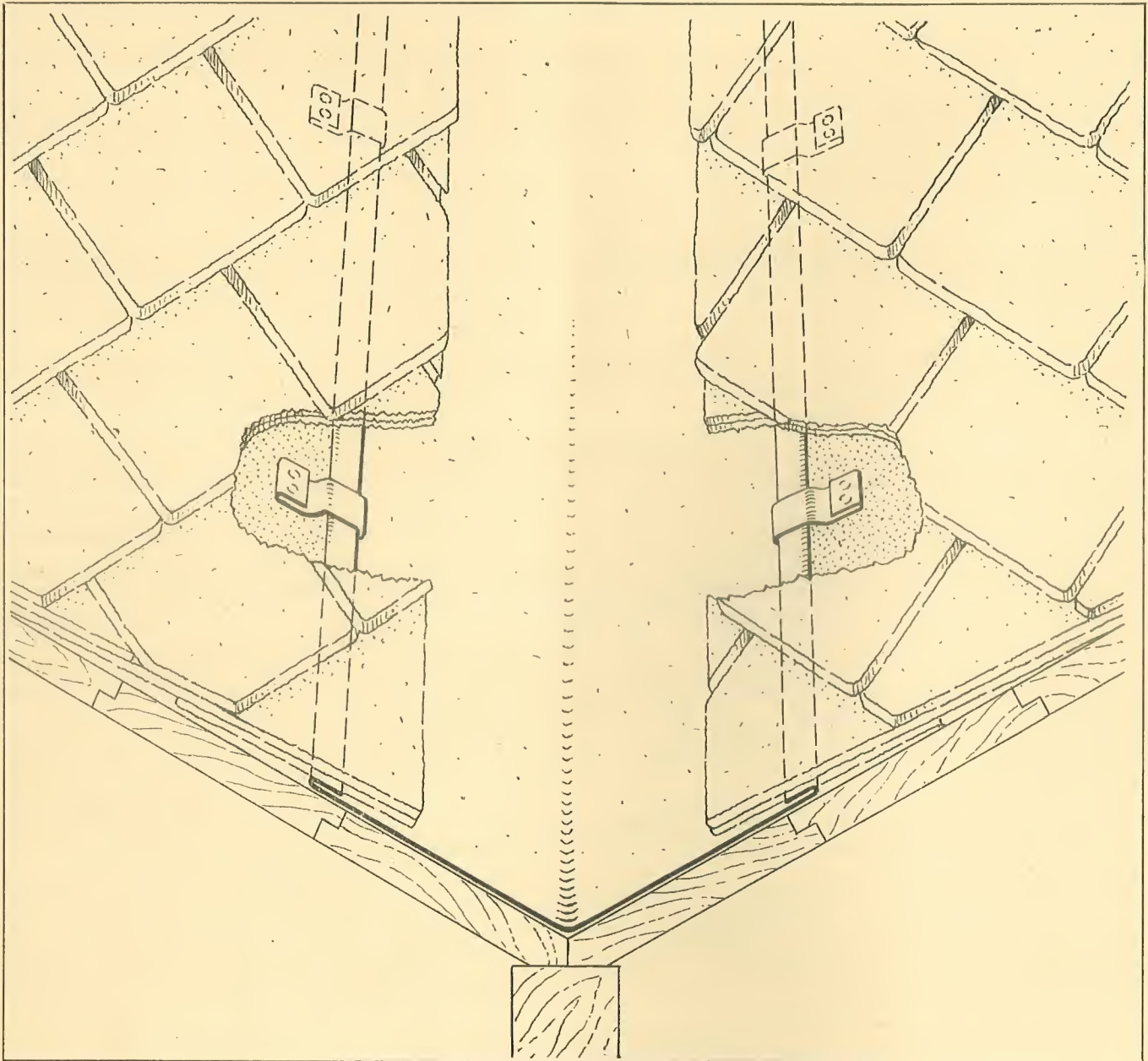


Figure 16—Showing method of clipping metal in place in an open valley

Open Valleys

Figure 16 shows the proper construction for an open valley.

NOTE: That the sheet metal is not nailed, but is held by metal clips or cleats which are locked into the turned back edges. This valley should

extend as far as possible under the shingle, but not so far that the nails which hold the shingles in place will be driven through the valley. The distance from the edge of the shingles to the bottom of the valley should be not less than 2" at the upper end, increasing one-half inch in eight feet toward the lower end.

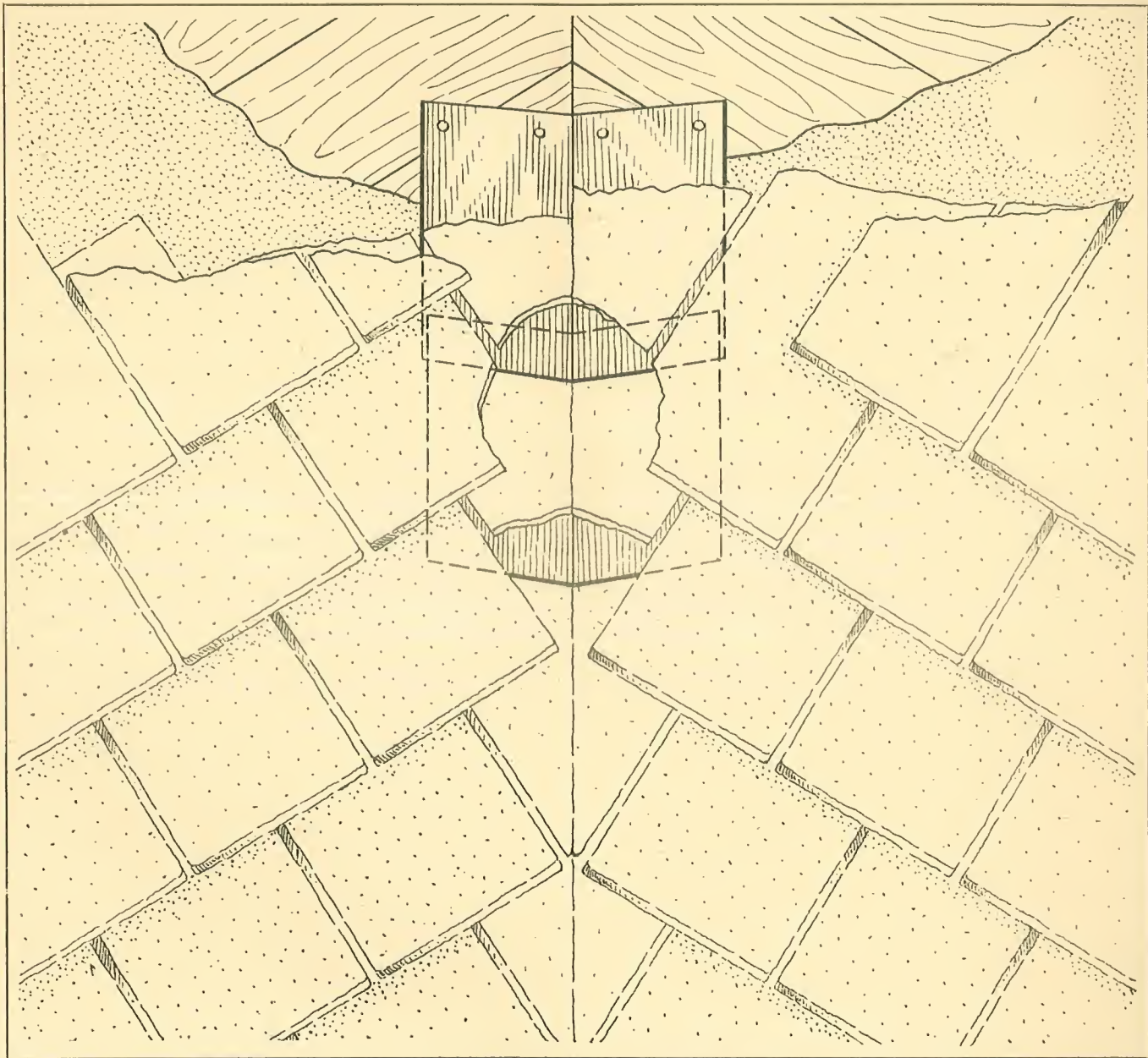


Figure 17—Showing a closed valley with metal shingled in

Closed Valleys

Figure 17 shows the method of laying a closed valley. The small pieces of sheet metal are "shingled in" with the different courses of Asbestos Shingle. Each piece is nailed to the

sheathing above the shingle on which it rests and is of such length that the shingles which cover it will completely cover the metal, and so that it will lap the piece in the succeeding course at least 2".

ROOFING—
HEXAGONAL METHOD

ROOFING—DUTCH
LAP METHOD

SIDING

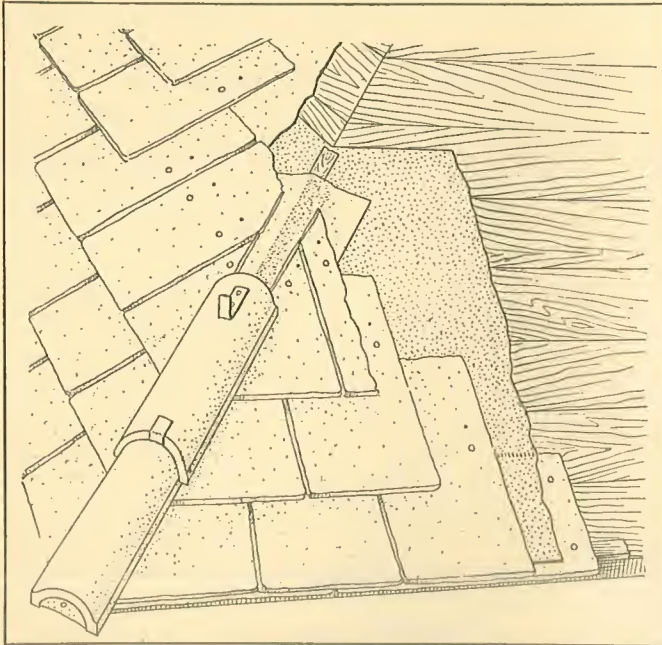


Figure 18—Hip Roll construction

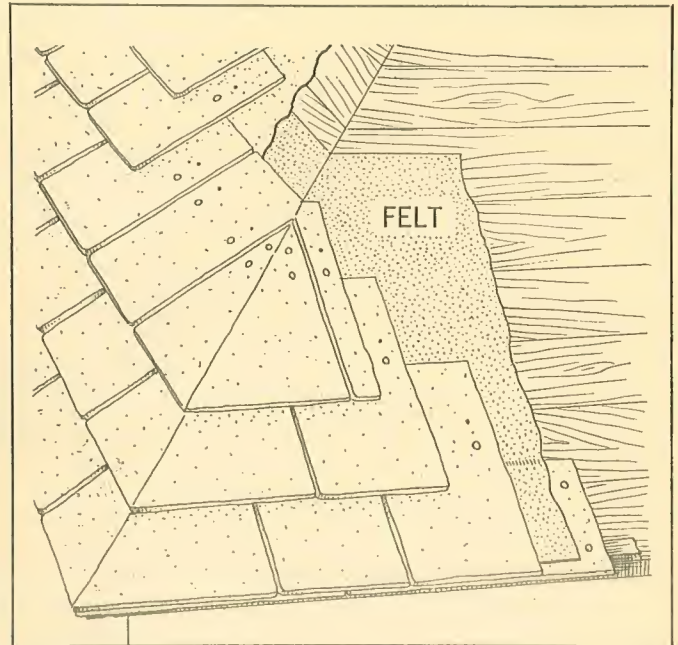


Figure 19—Showing method of laying a mitered hip

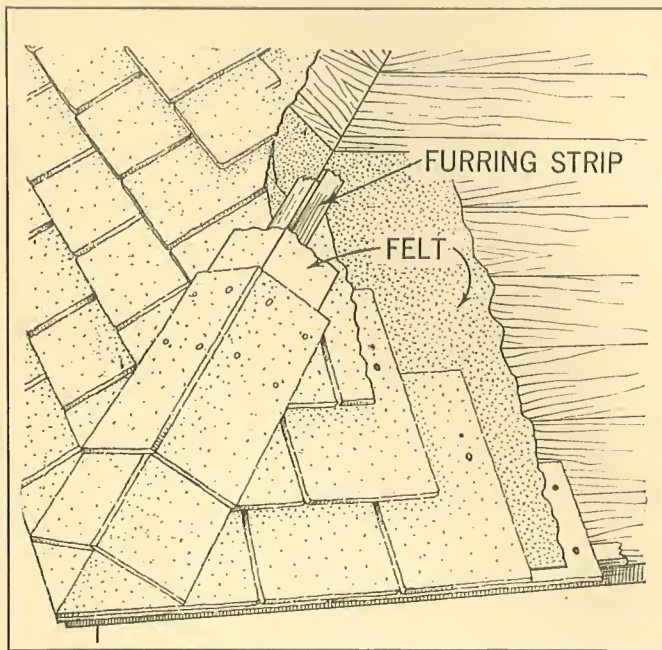


Figure 20—Showing Boston Hip construction

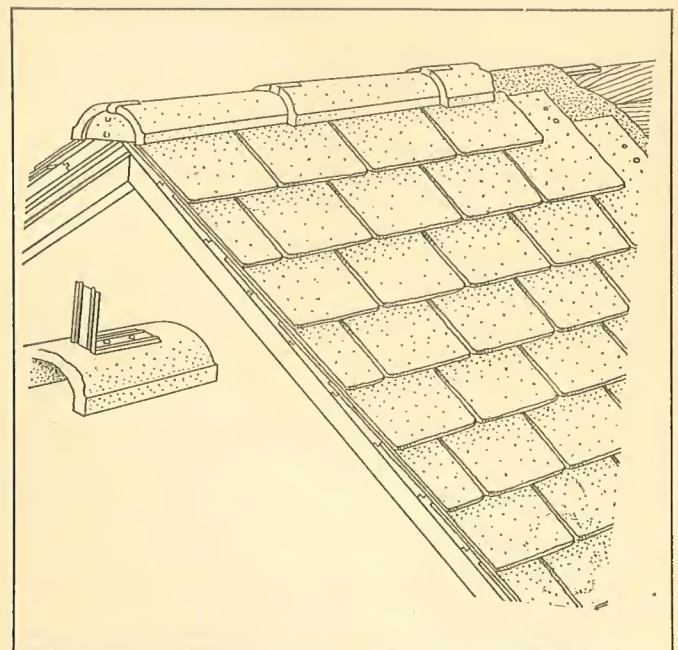


Figure 21—Method of laying Ridge Roll

Ridge

Figures 21 and 22 show the construction of the different types of ridge, which are practically the same as hip construction.

Hips

Figures 18, 19 and 20 show the different types of hip construction, each of which is fully explained on the drawing.

Figure 22 shows the No. 18, Boston Ridge and Hip shingle, 16" long by approximately 5¼" wide at the butt end and approximately 4½" wide at the head end. This shingle is made especially for this method of ridge and hip finish.

The ridges and hips must be prepared, previous to the application of the roof shingles, to receive such Ridge and Hip Shingles. Furring strips approximately two inches wide and approximately as thick as the total thickness of the roof shingles as applied, shall be secured, one on each side, abutting each other over the line of all ridges and hips.

A strip of the Asbestos Roofing Felt shall be doubled and applied over the furring strips under the ridge and hip shingles as shown in the drawing.

After the starting pieces, which shall be cut to about 2" greater than half-length, have been applied the first full length pieces shall be laid to completely cover the starting pieces. The application of full length pieces shall then proceed providing 7" weather exposure on each piece and overlapping the side edges

of adjoining pieces, in roof putty, alternately, right and left. The nailing of the last pieces installed at the end of the ridge or hip must be exposed nailing and therefore such nails shall be covered with roof putty of a suitable color.

Flashing

Figure 23 shows the recommended method of flashing around a dormer window. These same details can be followed in flashing chimneys, skylights, or practically any type of roof intersection.

NOTE: All exposed or loose edges of sheet metal should be finished with a turned or "hemmed edge."

Re-roofing

In re-roofing with American shingles, the methods followed are the same as those used for new work explained in the first part of the chapter, with one exception. In laying the eaves starters allow a half-inch overhang at the eaves instead of an overhang of one inch as with new work. If there is a hung gutter the shingles should overhang to discharge



Figure 22—Boston Ridge construction

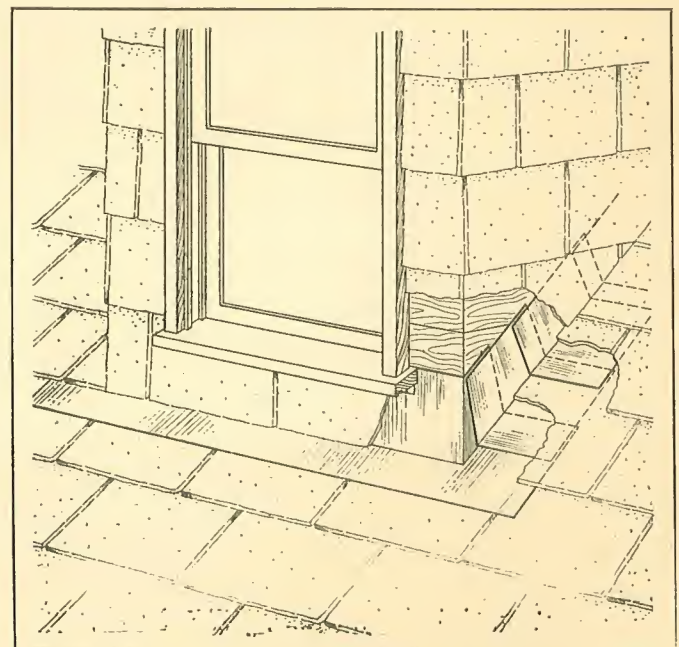


Figure 23—Showing flashing detail at dormer

into the center of the gutter. Be sure that the roof surface has been properly prepared as is outlined in Chapter III. The use of felt in re-roofing is not necessary.

Removing Broken Shingles

Occasionally, after laying a roof, shingles may become broken. These broken shingles are easily removed, using the method shown in Figure 24. Slip this "ripper" up under the

broken shingle and hook around the nails, then strike the off-set with a hammer or hatchet and the nails will be cut off or drawn. After the old shingle has been removed, insert a new one secured by one nail as shown. After the nail has been driven, slip a small piece of copper under the overlaying shingles as shown, so that it will cover the head of the nail and extend under the succeeding course as shown. If this copper is bent slightly it will hold itself in place.

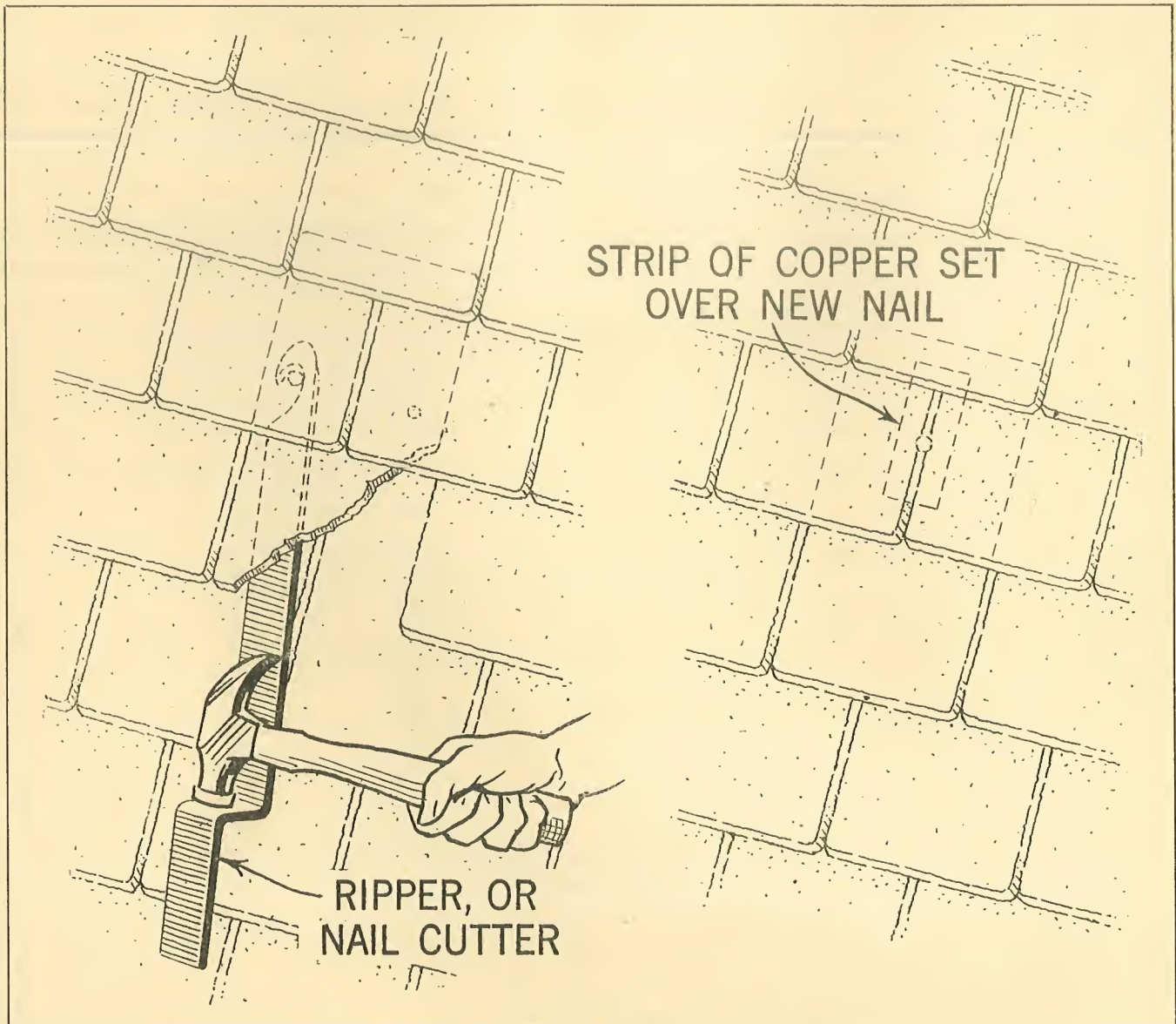


Figure 24—Removing and replacing broken shingles

Chapter V

Roofing—Hexagonal Method Shingles

Before laying shingles, cover the roof surface with Johns-Manville Asbestos Roofing Felt. Hexagonal Shingles must be lined up both horizontally and vertically. It is advisable to start work at the center of the eaves line. Having found the center by measuring, snap a chalk line at right angles to the eaves as shown in Figure 25, to mark the center line of the roof.

This right angle for the center line can be

easily found by one of the two methods shown, either the familiar 3-4-5 method, or the method of drawing arcs, both of which are very simple. Do not measure off a distance on the ridge equal to one-half of the eaves length and snap the line between these two points, because roofs are often "out of square", the center line would not be at right angles to the eaves and the shingles would not fit together as they should.

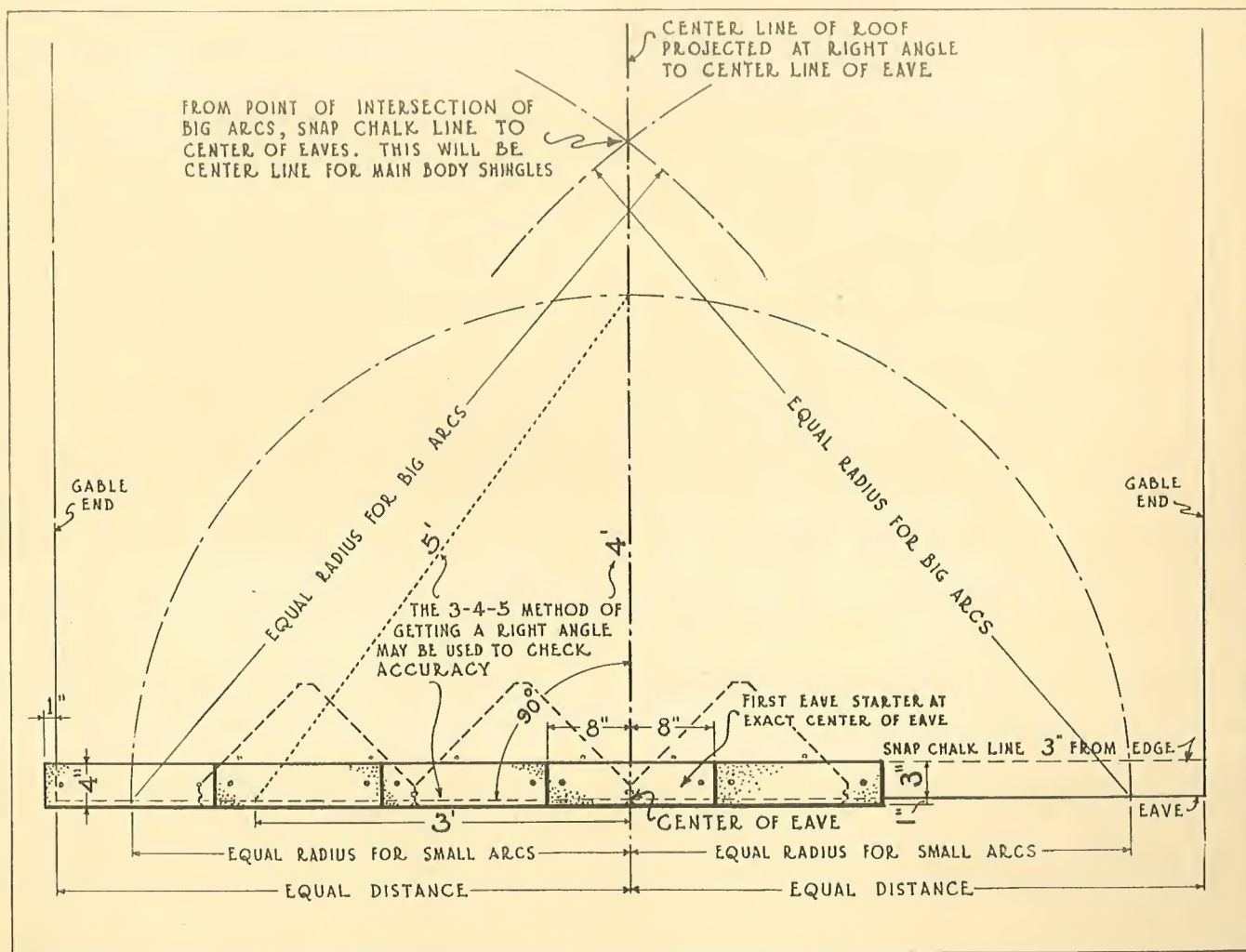


Figure 25—Method of locating center line and applying eaves starters in laying Hexagonal Shingles

ROOFING—
HEXAGONAL METHOD

ROOFING—DUTCH
LAP METHOD

SIDING

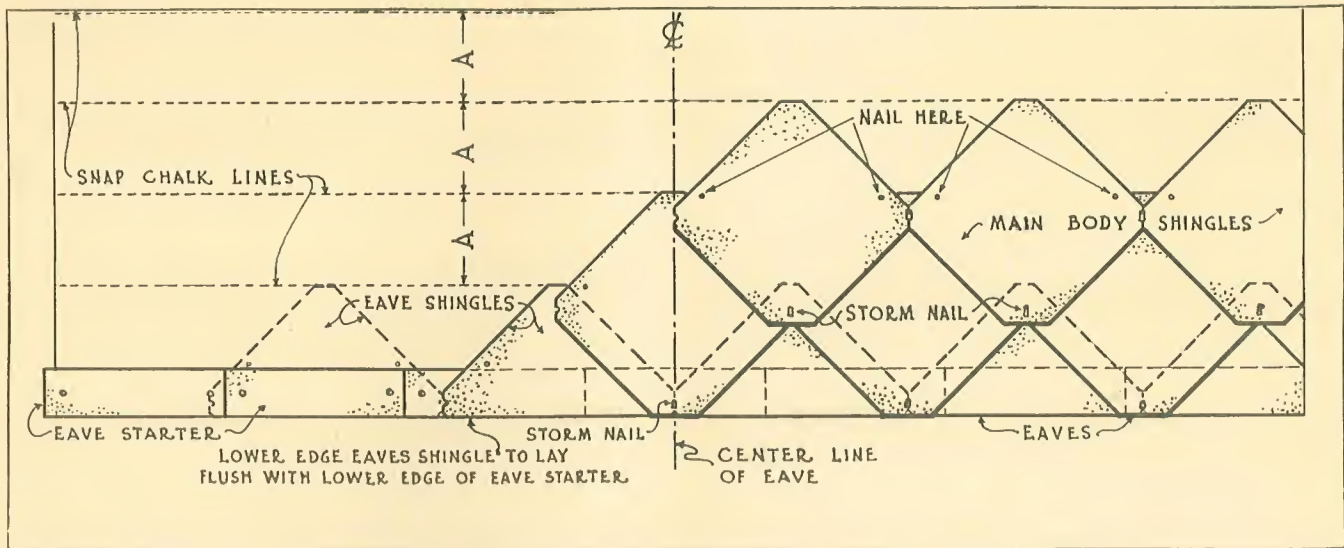


Figure 26—Method of applying eaves shingles and main body shingles

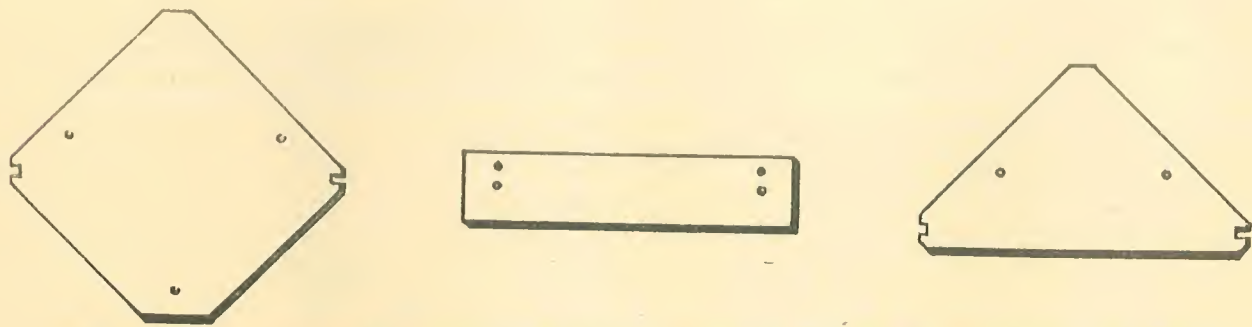


Figure 27—Pieces required for laying a roof by hexagonal method—main body shingle, eaves starter, eaves shingle

Eaves Starters

The first eaves starter should be nailed to the sheathing board under the roofing felt and at the center of the eaves, as shown in Figure 25. Work right and left from this. Eaves starters extend 1" beyond the eaves and 1" beyond each gable end and are always laid with the long dimension parallel to the eaves line. Figure 25 shows the details of this work.

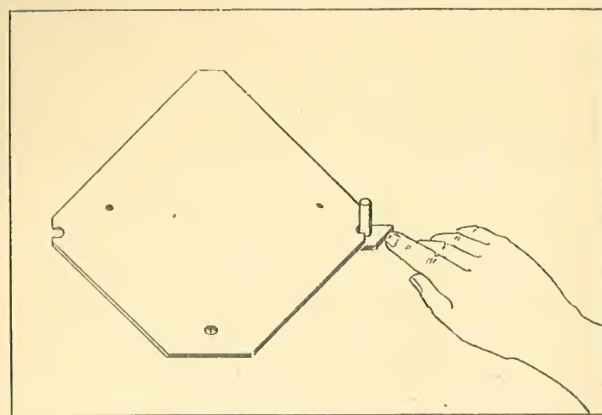
Eaves Shingles

One eaves shingle is laid at each side of the center line of the roof breaking joints with the center eaves starter. A copper storm anchor is set between each two eaves shingles into the slots in the corners. Then the eaves shingles are nailed in place with the lower edge flush with the eaves starter, using two nails to each eaves shingle in the holes provided. Figure 26 shows the details of this work.

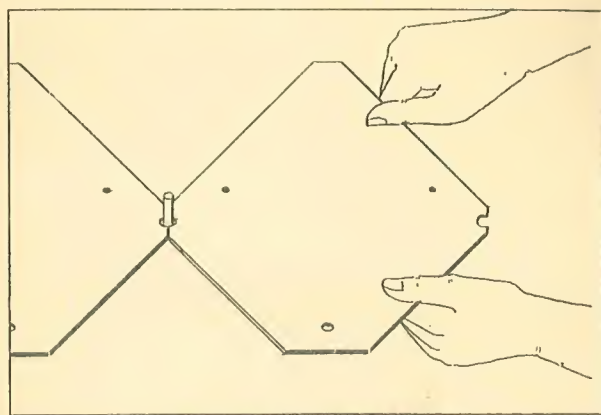
Main Body Shingles

It will be found of great assistance in speeding up the work if horizontal chalk lines are snapped on the roof for each course of main body shingles. Lay the head of each course of shingles against this line as shown in Figure 26. When using No. 70 shingle allow 8" between lines; when using No. 60 shingle allow 5½". It is recommended that several vertical chalk lines be snapped to the right and left of the center line and parallel to it running through the center of eaves shingles.

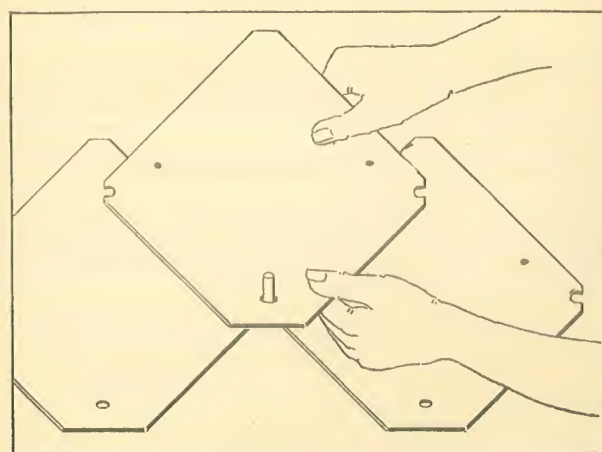
After the eaves starters and eaves shingles have been laid, begin with the main body shingles. Place them so that the hole in the lower corner of each shingle fits over the storm anchor between each two eaves shingles. Be sure to set a new storm anchor between each two main roof shingles. These two operations are followed over the entire roof as shown in Figure 28.



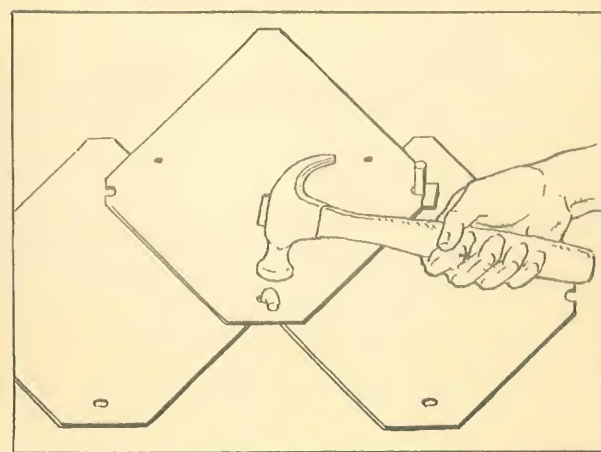
FIRST OPERATION



SECOND OPERATION



THIRD OPERATION



FOURTH OPERATION

Figure 28—Showing proper use of storm anchor

Before nailing the first main body shingles in place, in starting each course, it is well to set at least three adjacent shingles, in order that they may be properly lined up before any of them are nailed down. In working to the left and right of the center in each course of shingles, always keep one loose shingle ahead of the one being nailed in order to be sure that the courses will be straight both vertically and horizontally.

Valleys

Figure 29 shows the proper method of making an open valley. (See also page 16.) Long closed valleys cannot be used with hexagonal shingles. Note that the metal valley lining is not nailed in place but is held by metal clips or cleats which are locked into the turned back edges of the valley lining. The valley lining should extend under the shingles as far as possible, and the nails which

hold the shingles to the roof shall be driven, so as not to pass through the metal.

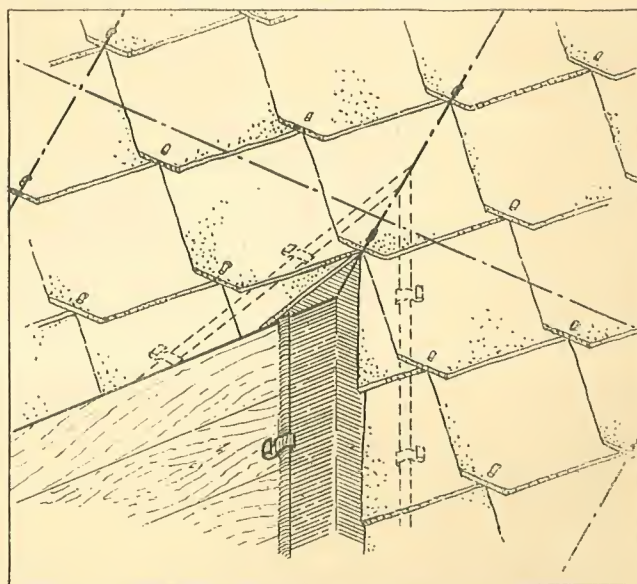


Figure 29—Valley construction on Hexagonal Method Shingles

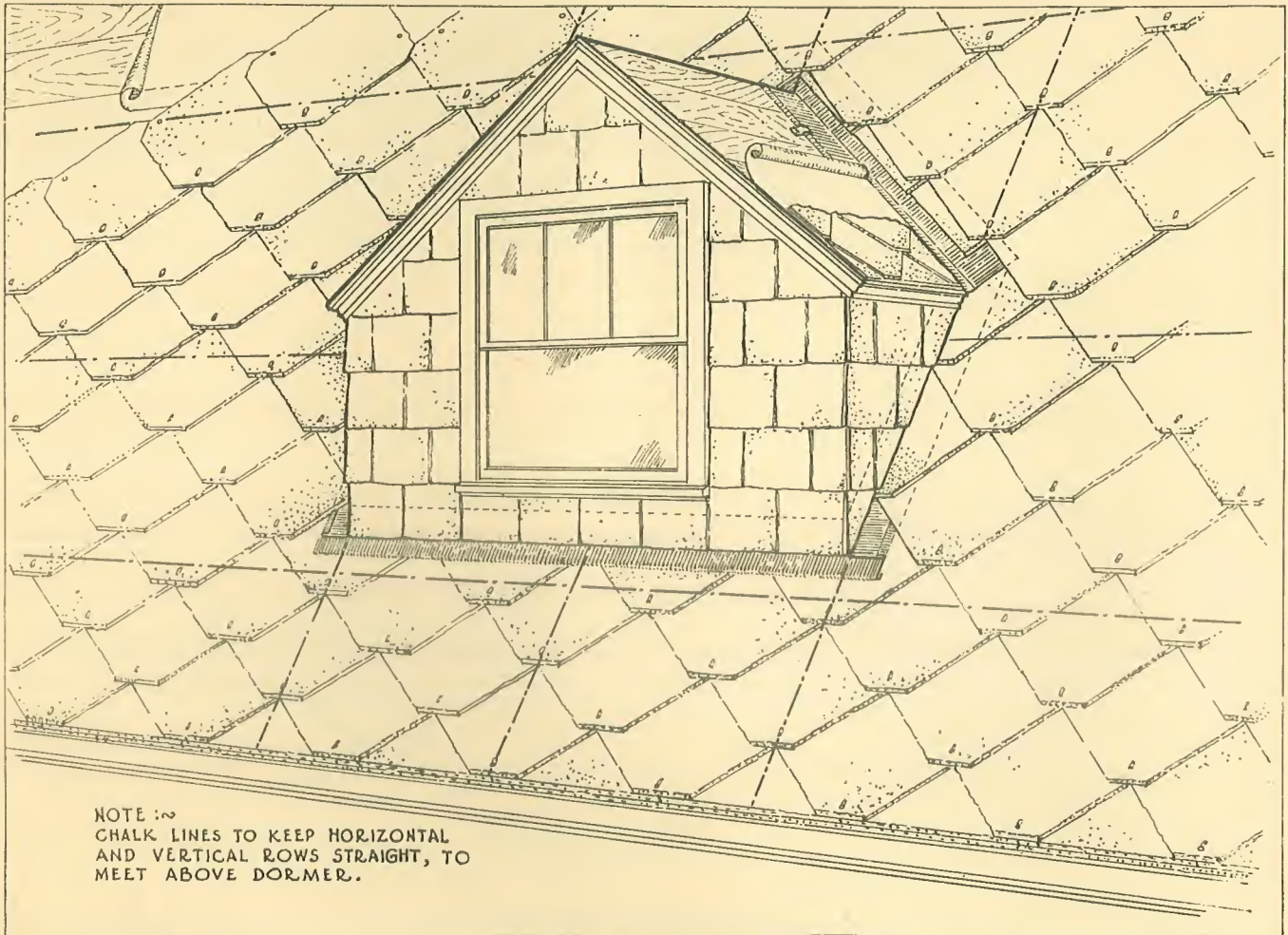


Figure 31—Shingling around the dormer—showing use of vertical and horizontal snap lines

Ridges and Hips

Figure 30 shows the details of hip roll construction. The main body shingles on each side of the hip are cut at the furring strip and a piece of Johns-Manville Asbestos Roofing Felt, of the same weight as that used under the shingles, is placed over the furring strip as shown. The first section of hip roll is then set at the lower end and nailed at two points, near the lower end through a hole which must be punched and at the upper or smaller end. At this point nail through a copper ridge or hip roll clip as shown in Figures 21 and 30.

The next and all following sections of hip roll are placed as follows. Set them in position against the ridge or hip roll clip, nail them at the upper end and then bend the copper clip at the lower end down into posi-

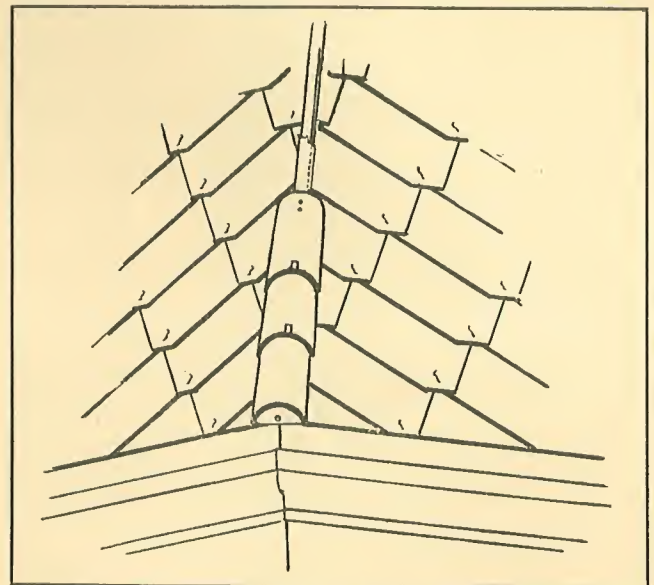


Figure 30—Hip Roll for Hexagonal Shingles

tion as shown. When desired a semi-circular piece can be cut from one of the shingles and inserted at the lower end of the hip.

Ridge roll construction is essentially the same as that used on the hips. Start laying the ridge roll at the end farthest away from the direction of prevailing winds, or storms, and fasten the following sections the same as if working on a hip.

Dormer Construction

In laying hexagonal shingles around a dormer, it is advisable to snap chalk lines as shown in Figure 32, in order to be sure that when you have shingled up beyond the top of the dormer, you will be able to match the shingles as you work in from each side. With both the vertical and horizontal chalk lines, you will find that working around a dormer is as simple as laying straight roofing. Figure 32.

Irregular Roofs

In working on irregular or badly cut up roofs, it will make the work much easier if you start at the gable end with a full eaves starter and cut the first eaves shingle in half. The gable starting shingle in every other course of main roof shingles will then be a half shingle. On roofs of this kind, it is

advisable to strike chalk lines, both vertical and horizontal, at frequent intervals to act as guides.

Re-roofing

Re-roofing work, using Hexagonal Shingles, is the same as if a new roof were being laid. There are two points, however, which should be kept in mind. Old roofs, due to settling of the building, are much more liable to be "out of square". For this reason it is very important to be sure that the center line from ridge to eaves is struck at a right angle to the eaves line. Full details are given in Figure 25, Page 21. At the eaves, allow only a one-half inch overhang instead of one inch as with new work. If there is a hung gutter the shingles should overhang to discharge into the center of the gutter. Roofing felt is not needed for re-roofing work.

Removing Broken Shingles

In removing broken hexagonal shingles, straighten up the storm anchors as shown in Figure 33 before using the ripper to cut off the nails which hold the old shingle. Then put a small piece of copper over the storm anchor at "C" as shown and nail it to the roof. Notch the new shingle as shown, slip it in place and then bend down the storm anchors.

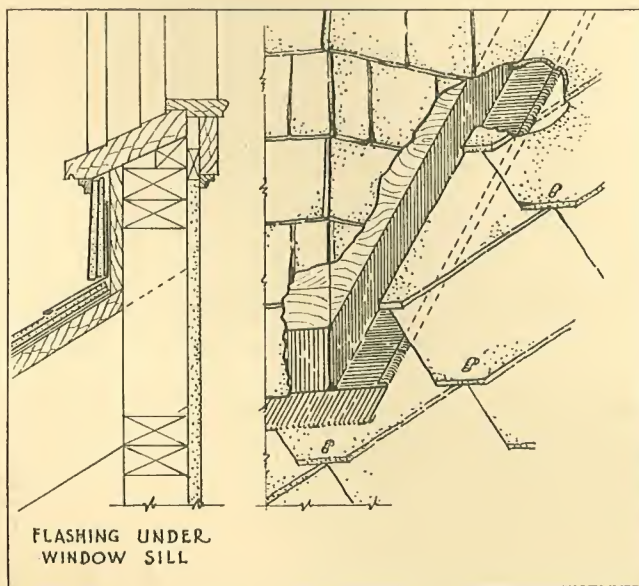


Figure 32—Flashing around lower corner of dormer—showing flashing under sill

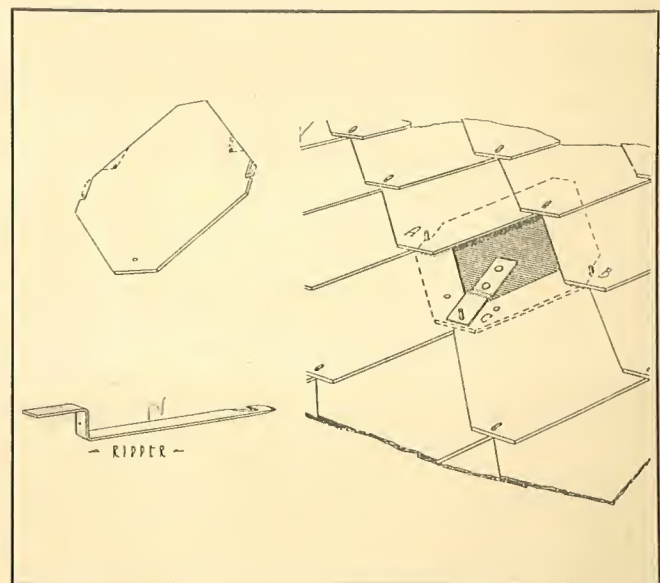


Figure 33—Showing Method of removing and replacing broken Hexagonal Shingles

Chapter VI

Roofing—Dutch Lap Method Shingles

Before laying shingles on new work, cover the roof surface with Johns-Manville Asbestos Roofing Felt. The application of this type of shingle is a simple operation. As the shingles are furnished with rough, irregular edges, they must be aligned on the shingle nail and storm anchor holes, paying no attention to the contact or lack of contact between the side edges of the shingles of adjoining courses. The storm anchor holes and certain nail holes must register (occur one over the other) as described in detail hereunder.

Description of Shingles and Fasteners

The pieces involved in the application of this type shingle, together with the fasteners, are illustrated in Figure 34.

The No. 40 is the shingle, the No. 41 the eaves starter.

The shingles and starters shall be secured to the sheathing with galvanized, needle-pointed, shingle nails at least $1\frac{1}{4}$ " long if applied over new sheathing, and 2" long if applied over old wood shingles. The shingles

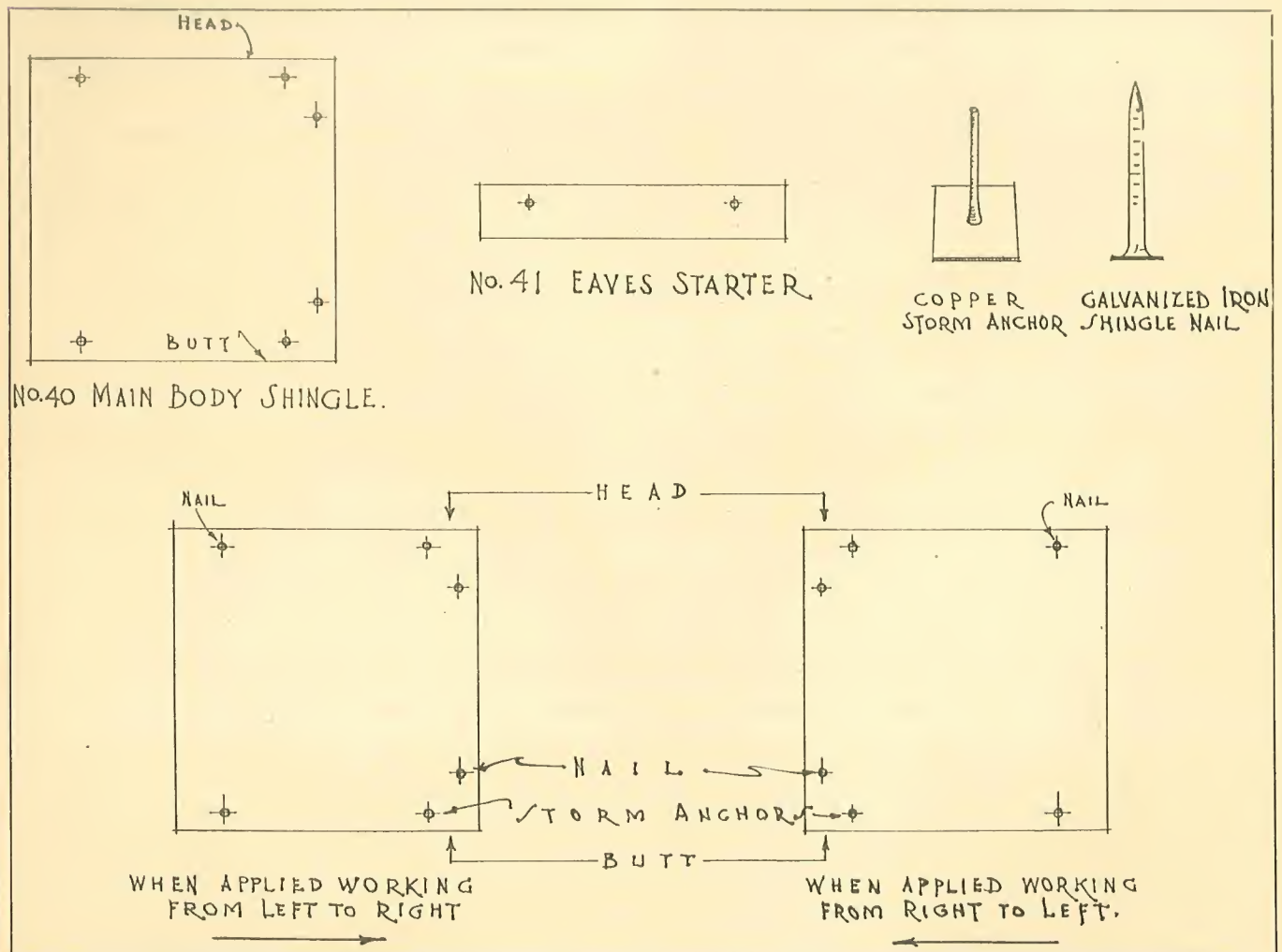


Figure 34—The shingles and accessories needed for laying a roof by the Dutch Lap Method

shall be secured to each other with the copper storm anchors, all as described hereinafter.

Application

Application shall be started at the end of the roof farthest from the direction from which the most severe storms come, or if appearance is of greater importance, application shall be started at the end from which the job will be most frequently observed. The reason for this is evident when it is understood that, as applied, these shingles overlap each other at the side and therefore, one side edge is entirely exposed. Shingles laid by the Dutch Lap Method give pleasing vertical shadow lines.

The drawings show the shingles applied, working from left to right. In working from right to left the eaves starters are lapped in the opposite direction and the shingles re-

versed, end for end, bringing the nail holes adjoining one side edge to the left hand instead of the right hand. See Figure 34.

Eaves Starters

Before applying the starters, the waterproof felt along the eaves shall be raised and placed over the starters after they have been applied.

The eaves starters shall be applied to overhang the eaves and the gables one inch and with their long dimension paralleling the eaves. Each piece shall be laid to lap the preceding piece approximately one-third its length, and so that the nail holes will "register" (occur one over the other).

Starting at the end of the roof, apply an eaves starter which has been cut to two-thirds its original length and with a new hole punched $2\frac{13}{16}$ " from the cut end. See Figure 35. Fasten with a nail driven through

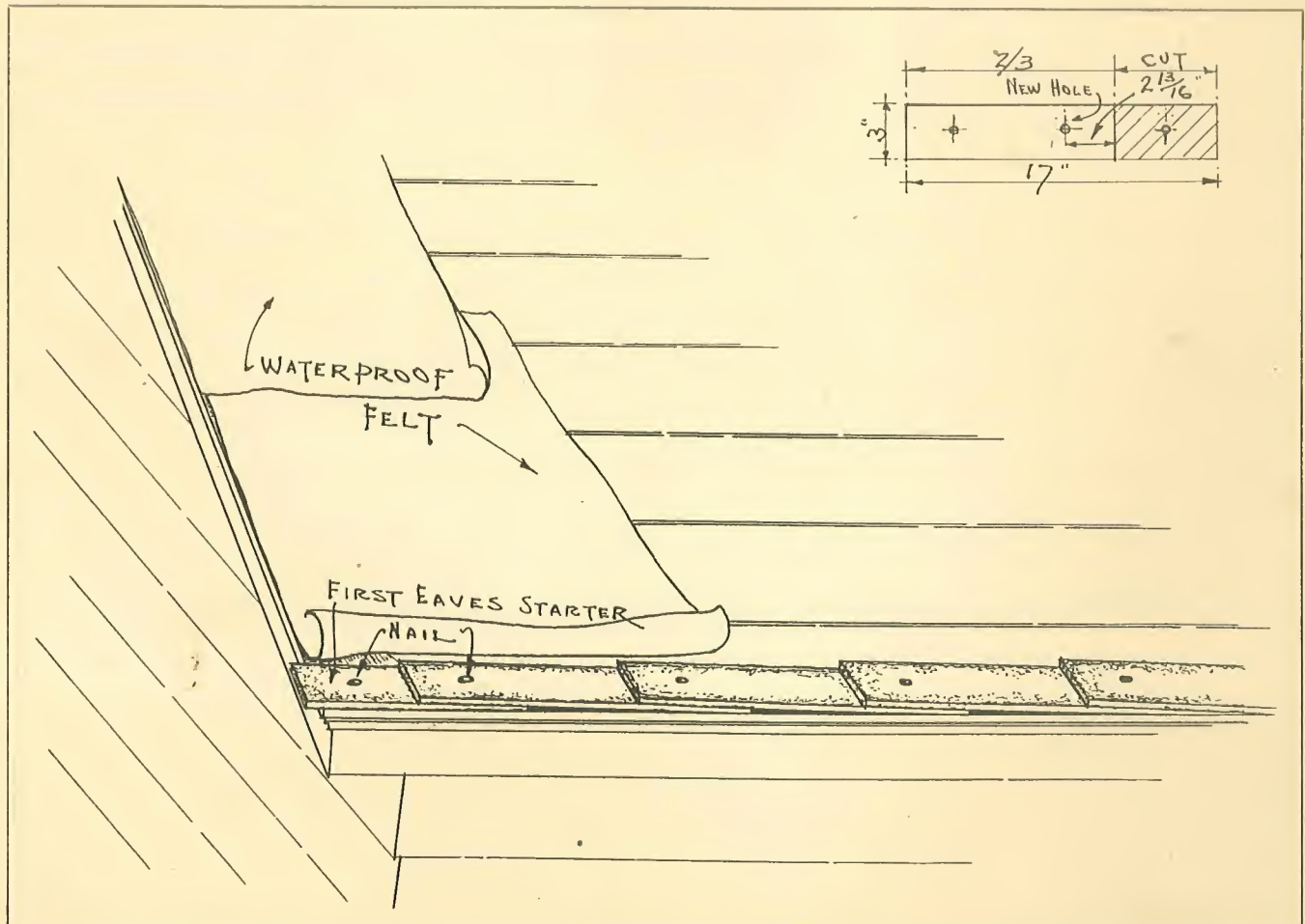


Figure 35—Showing how eave starters and waterproof felt are applied in the Dutch Lap Method

the hole nearest the starting end. Overlapping this first piece half its length, apply a full length eaves starter. Fasten with a nail driven through the hole which registers over the hole in the preceding eaves starter. See Figure 35. Proceed in a similar manner to the end of the roof, fastening each piece with a nail which shall pass through the hole in both the overlaying and underlying pieces. The last piece applied shall be cut as may be necessary to overhang one inch.

Main Body Shingles

The shingles shall be applied to completely cover the eaves starters with the same one inch overhang at eaves and gables.

The shingles, being provided with six holes, are reversible, end for end, so that they may be applied, working from right to left or left to right, without punching additional holes. As applied, five of these six holes are used; three for shingle nails and two for storm anchors. See Figure 34. Each shingle shall be secured with two shingle nails and one storm anchor. New holes shall be punched in cut shingles as required. Each shingle shall be applied to lap the preceding shingle along its side edge, one-third its width, and so that the nail and storm anchor holes will register. The shingles of each course shall overlap those of the preceding course, three inches.

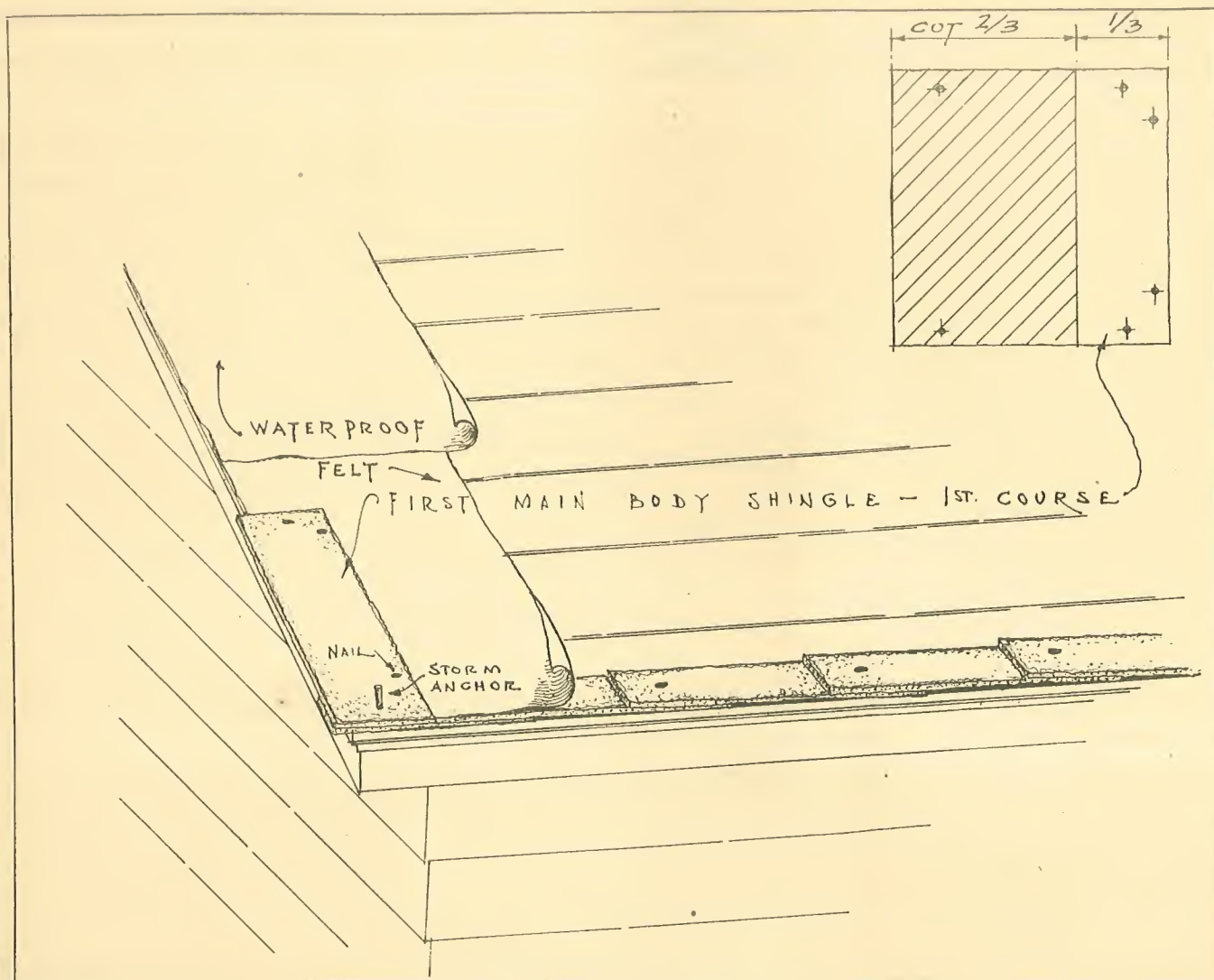


Figure 36—Laying the first main body shingle in the first course by the Dutch Lap Method

Laying First Course

Starting at the end of the roof, apply a shingle which has been cut to one-third its original width. See Figure 36. Insert a storm anchor in the hole provided and fasten the shingle with a nail driven through the hole adjacent to the side edge near the bottom. See Figure 36. Completely overlapping this first shingle, apply a full size shingle, with one storm anchor hole over the storm anchor applied with the preceding shingle and with an additional storm anchor inserted in the other storm anchor hole. Bend down the first storm anchor. When bending storm anchors, press the shingle down firmly in place in order that the storm anchor may hold the shingle tightly against the underlying shingle. Fasten the

shingle with a nail driven through the hole which registers over the hole in the preceding shingle and with another nail driven through the hole adjacent to the side edge near the bottom. See Figure 37. Proceed in a similar manner, to the end of the roof, inserting a storm anchor in each shingle and placing the shingle with the other storm anchor hole over the storm anchor in the preceding shingle, bending down this latter storm anchor and fastening the shingle with two nails, one driven through the nail hole which registers over the hole in the preceding shingle, the other driven through the hole adjacent to the side edge near the bottom. The last shingles applied shall be cut as may be necessary to overhang one inch.

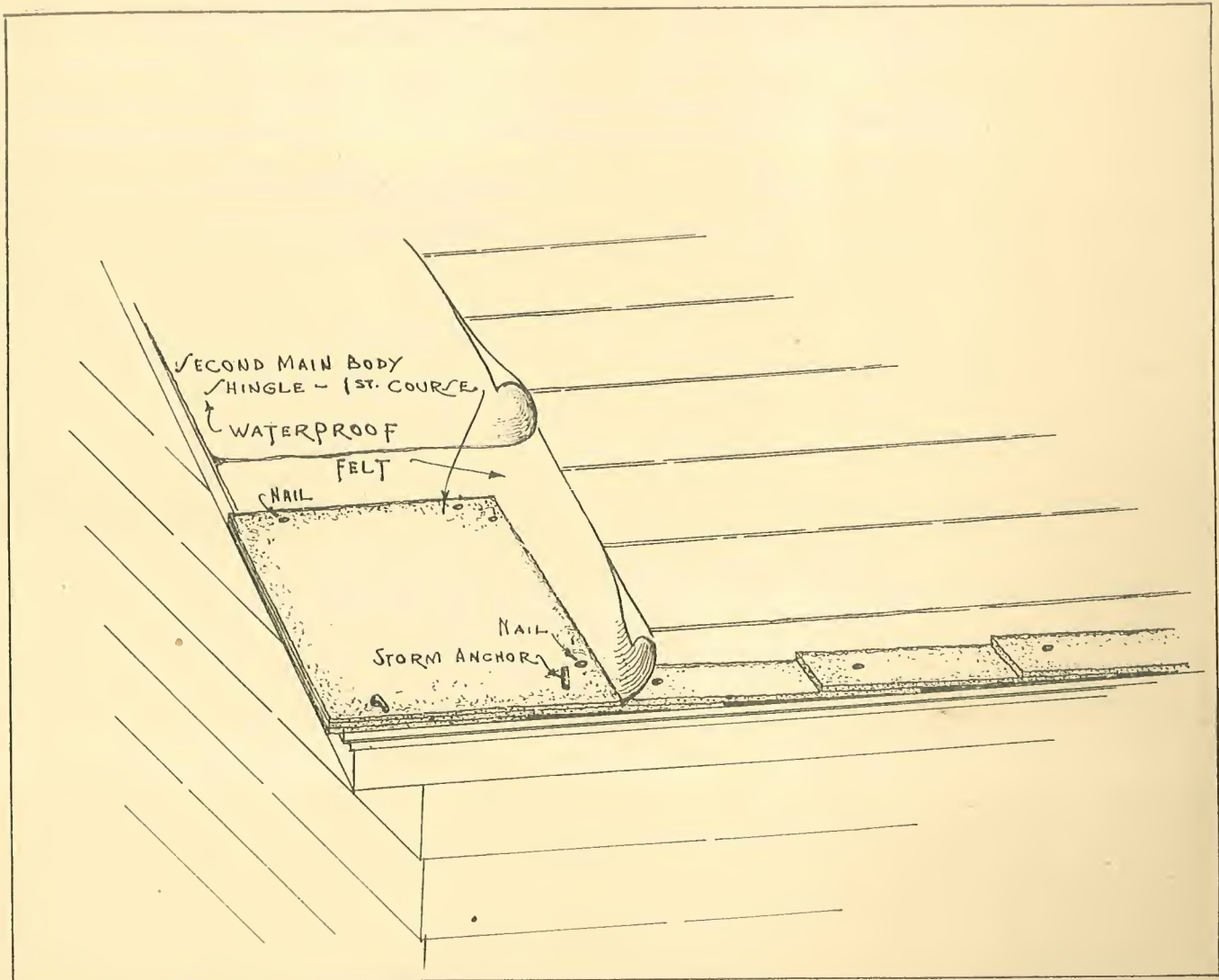


Figure 37—Laying the second main body shingle in the first course by the Dutch Lap Method

Laying Second Course

The second course shall be started with a shingle which has been cut to two-thirds its original width and with a new hole punched adjoining the head. See Figure 39. Insert a storm anchor and fasten, then proceed in the same manner as described for the first course.

This and succeeding shingles shall be applied to overlap the shingles of the preceding course, three inches.

Laying Third Course

The third course shall be started with a one-third width shingle, see Figure 39 overlaid

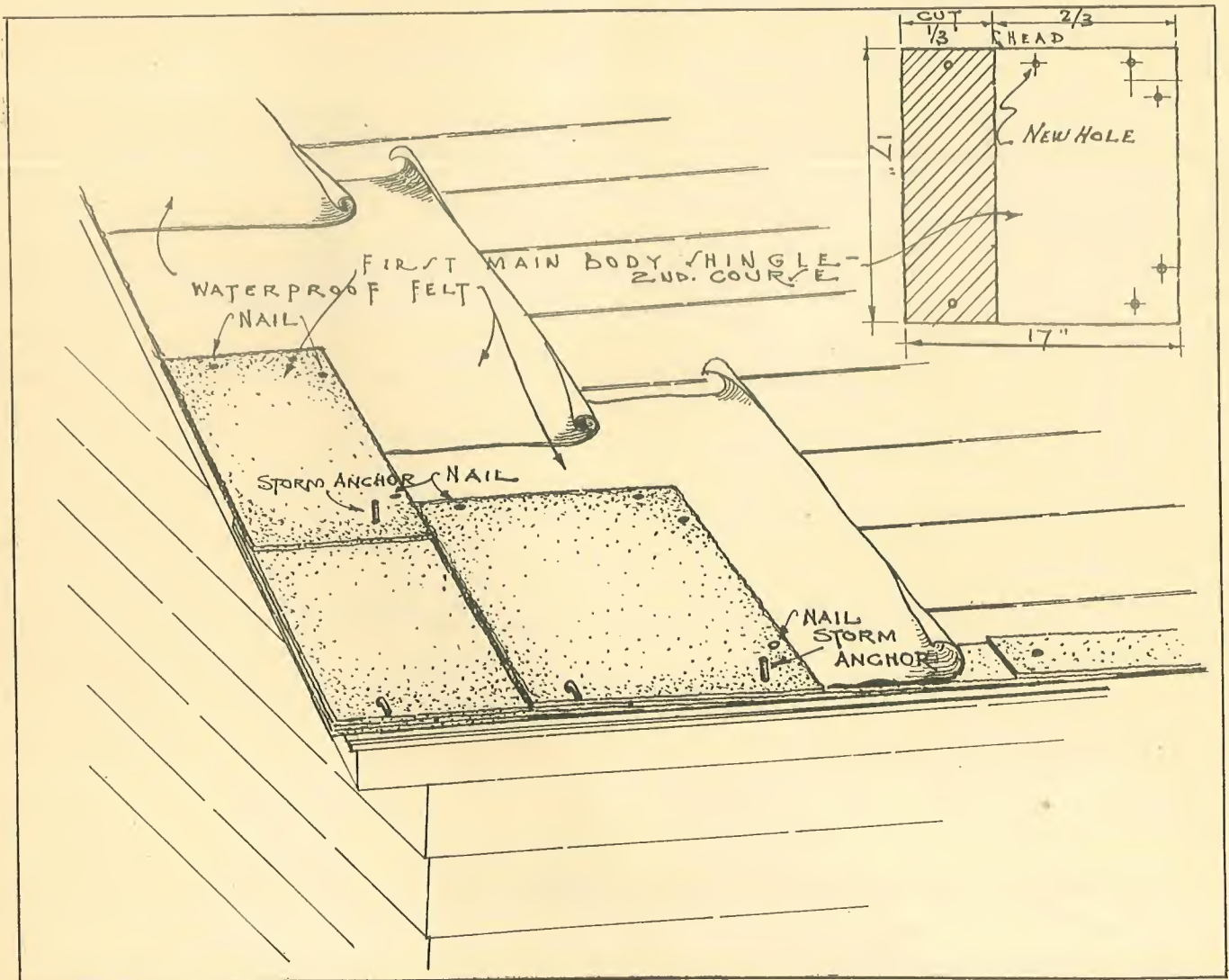


Figure 38—Laying the first main body shingle in the second course by the Dutch Lap Method

with a full width shingle, the fourth course with a two-thirds width shingle and so on, alternating. The last shingles applied in each course shall be cut as may be necessary to overhang one inch.

Ridges, Hips, Corners

At ridges, hips and corners, the shingles shall be cut to abut the furring strips previously applied. Refer to page 19. The

shingles shall be neatly cut to fit all adjoining vertical surfaces, openings, etc.

Flashings shall be installed in a manner similar to that employed with other types of shingles.

Ridges, hips and exterior corners shall be finished with Ridge and Hip Shingles or Ridge Roll in the same manner as with other types of asbestos shingles.

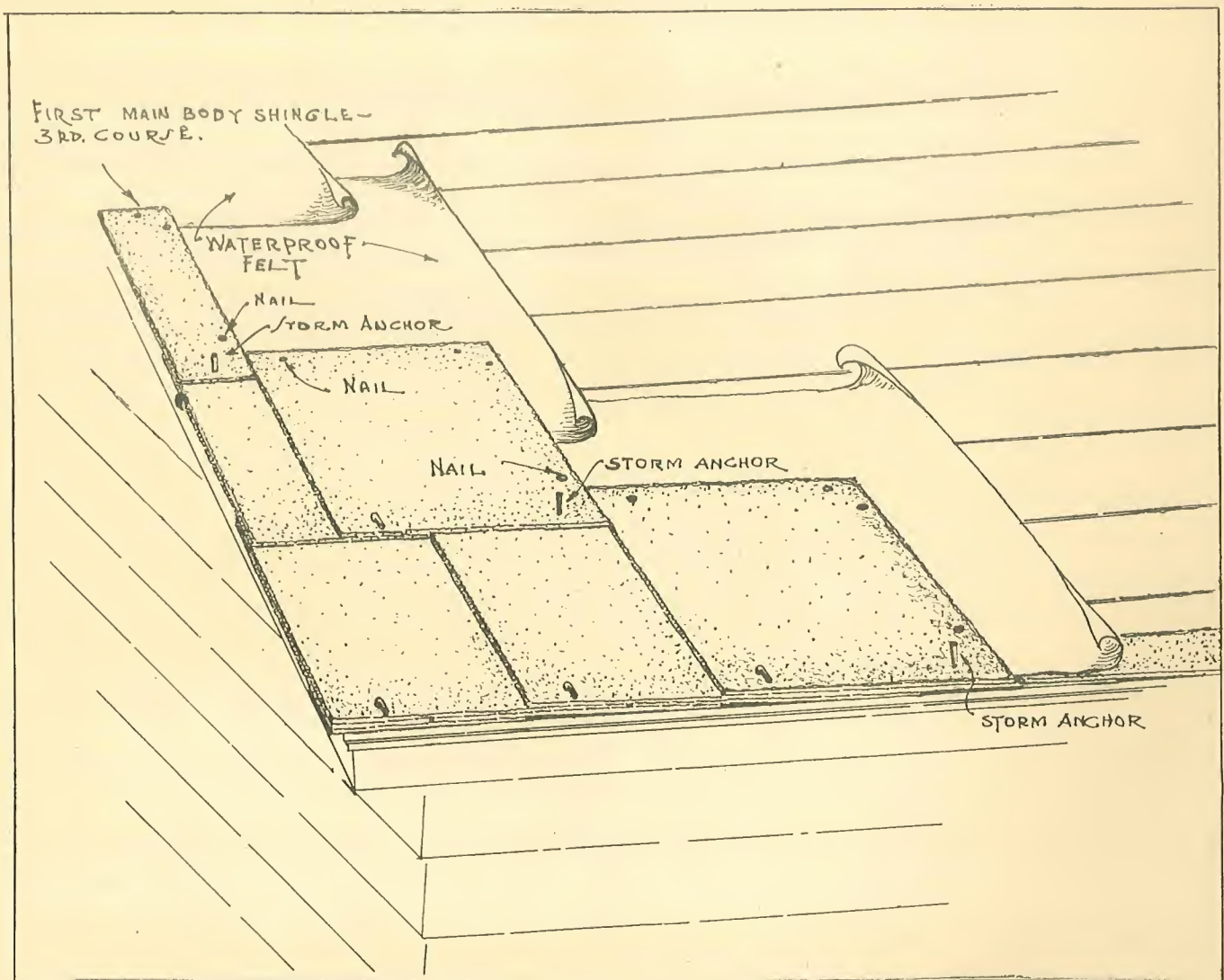


Figure 39—Laying the first main body shingle in the third course by the Dutch Lap Method

Removal of Broken Shingles and Replacing with New Shingles (see Figure 40)

- First: Bend up storm anchors at A and B.
- Second: Shatter the broken shingle by a hammer blow in the center, then remove the pieces.
- Third: Insert ripper under overlaying shingle and engage notch in same with the nail under C. Strike offset on ripper handle with a hammer, which will withdraw the nail. In same manner, withdraw nail at D and E.

Fourth: Insert a new storm anchor in new shingle. If it has been found impossible to withdraw the old nails, notch the new shingle at nail holes as shown.

Fifth: Slide new shingle into place over storm anchor at B, raising overlaying shingle to allow insertion at F of new storm anchor in new shingle, then bend down storm anchors at A, B and F, completing the job.

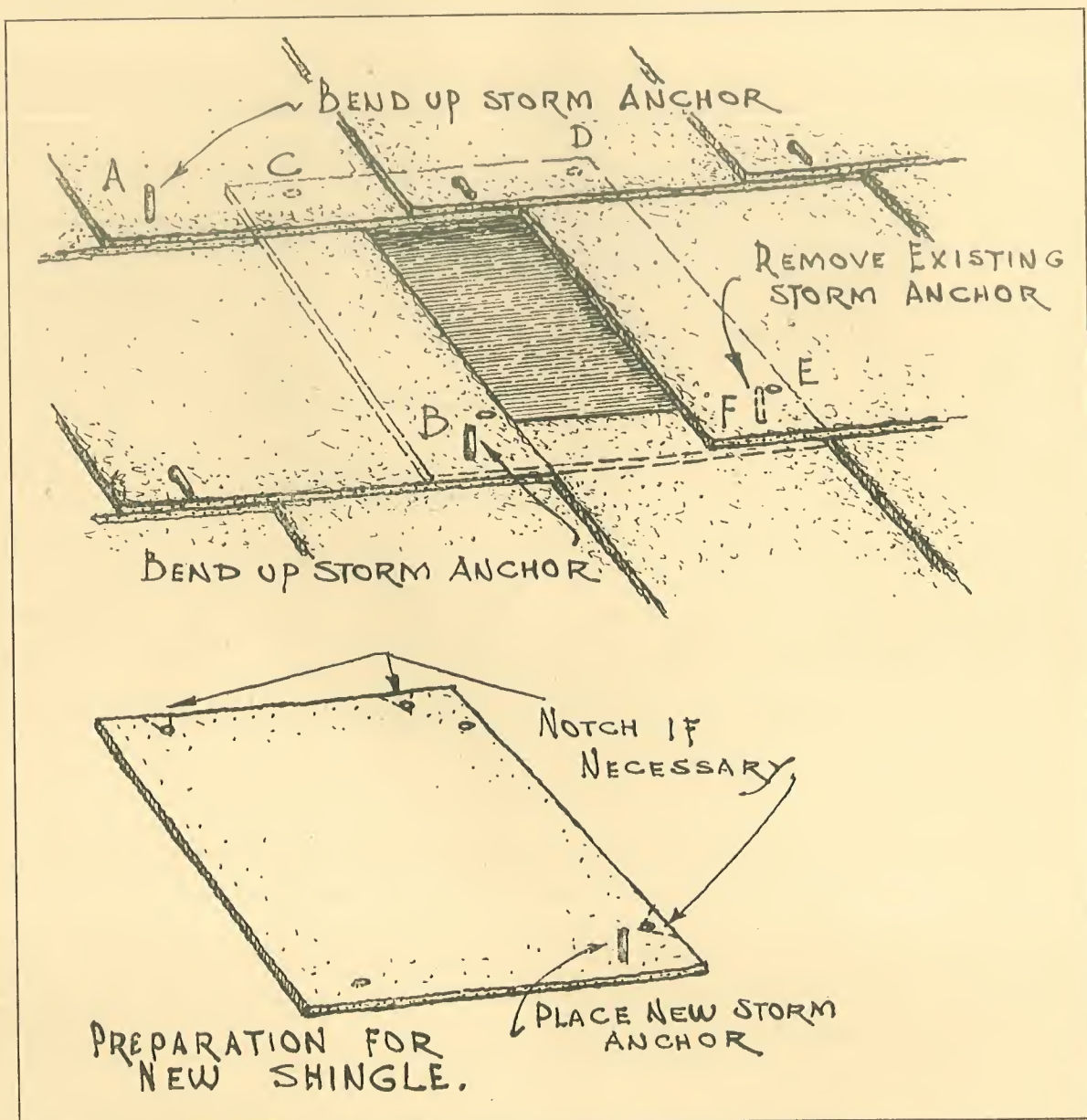


Figure 40—Removing and replacing broken shingles by the Dutch Lap Method

Chapter VII

Siding—American Method Shingles

Consider a siding job as a roofing job in which the surface to be shingled is vertical, and the difficulties, which are more feared than actual will disappear. On new siding work, lay Johns-Manville Asbestos Roofing Felt—15 pounds or heavier—over the sheathing before laying the shingles and holding in place temporarily with laths if necessary.

Start at the water table, using a cant strip and eaves starter shingles as shown in Figure 41. After the row of eaves starters is in place, drop the lower edge of the roofing felt over them and then lay the first course of full-sized shingles, breaking joints with the eaves starters in exactly the same way as on a roofing job.

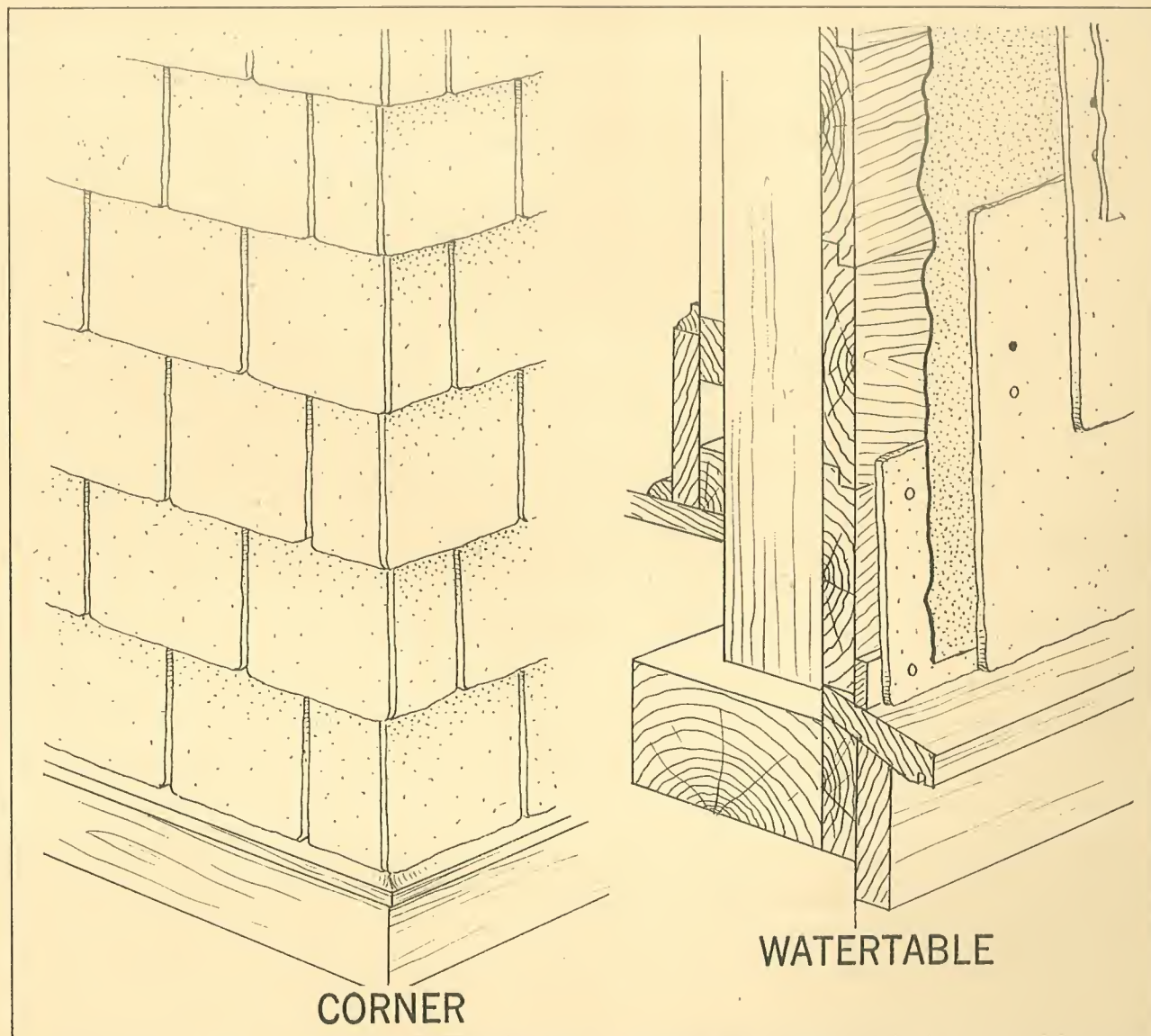


Figure 41—Siding details—American Method—showing corner and watertable construction

Laying Shingles

Siding work is most generally done by laying the shingles with the butts aligned as is shown in Figure 13, Page 13. When rough and irregular siding is desired the shingles are laid in the same way as shown in Figures 14 and 15 for staggered butts or textural roofing work.

Window and Door Construction

Figure 42 shows the construction to be followed around window and door openings.

Note that this shows only the side and under-sill construction. The top of a window or door is treated in the same way as a water table. It is advisable to use a metal flashing across the top.

At the top of the side wall of the house the shingles extend under the mouldings as shown in Figure 43. Outside corners are usually mitred as shown in Figure 41, though, if desired, the hip construction shown in Figure 22 may be used. Inside corners are generally mitred as shown in Figure 44. Both corners may be finished with the metal corner strip as shown in Figures 45, 46 and 47.

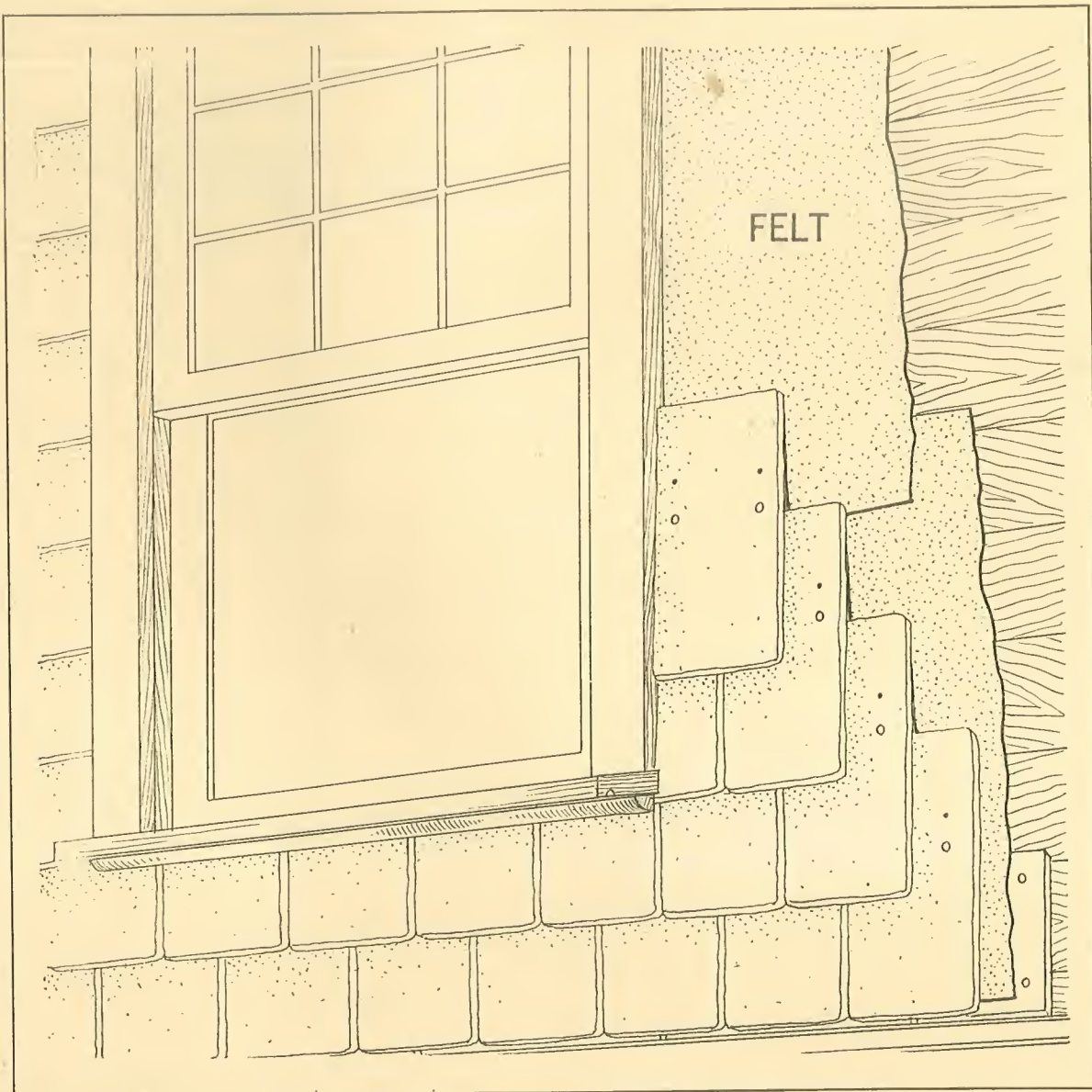


Figure 42—Showing details around window—siding by the American Method

Re-siding—American Method Shingles

For re-siding work the preparation of the surface has already been described in Chapter III. The simplest construction at the water table is the one where the Asbestos Shingles form their own water table, using the old water table to form the cant. At window and door openings, follow the constructions shown in Figure 9. At the underside of the sill the shingles are laid flush and a strip of quarter round moulding is used to cover the upper edge. See Figure 42. At the sides of the windows where the new shingles extend beyond the outside casing, a moulding is set as shown. See Figures 9 and 12.

Inside and outside corners are treated in the same manner as new work.

At the top of wall there are various constructions possible depending upon the conditions of the old work; the two following will be found the simplest. Remove the old frieze

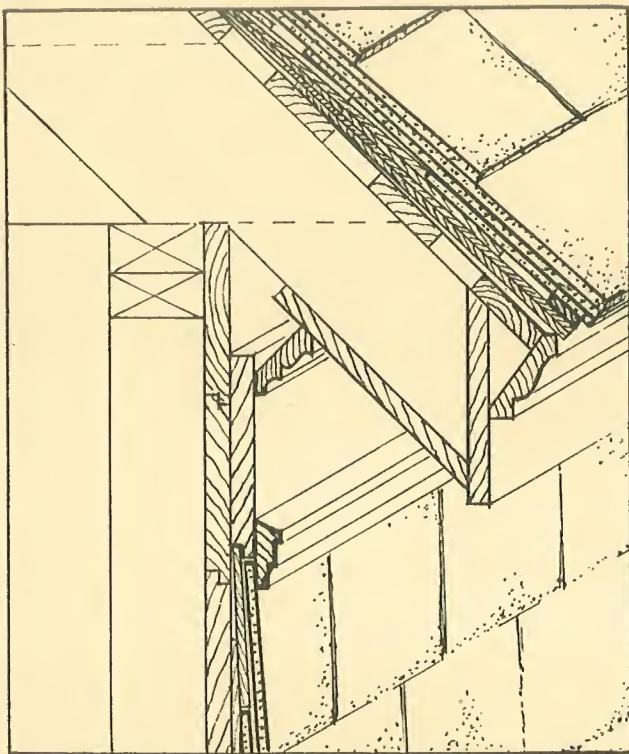


Figure 43—Detail at top of wall—siding by American Method

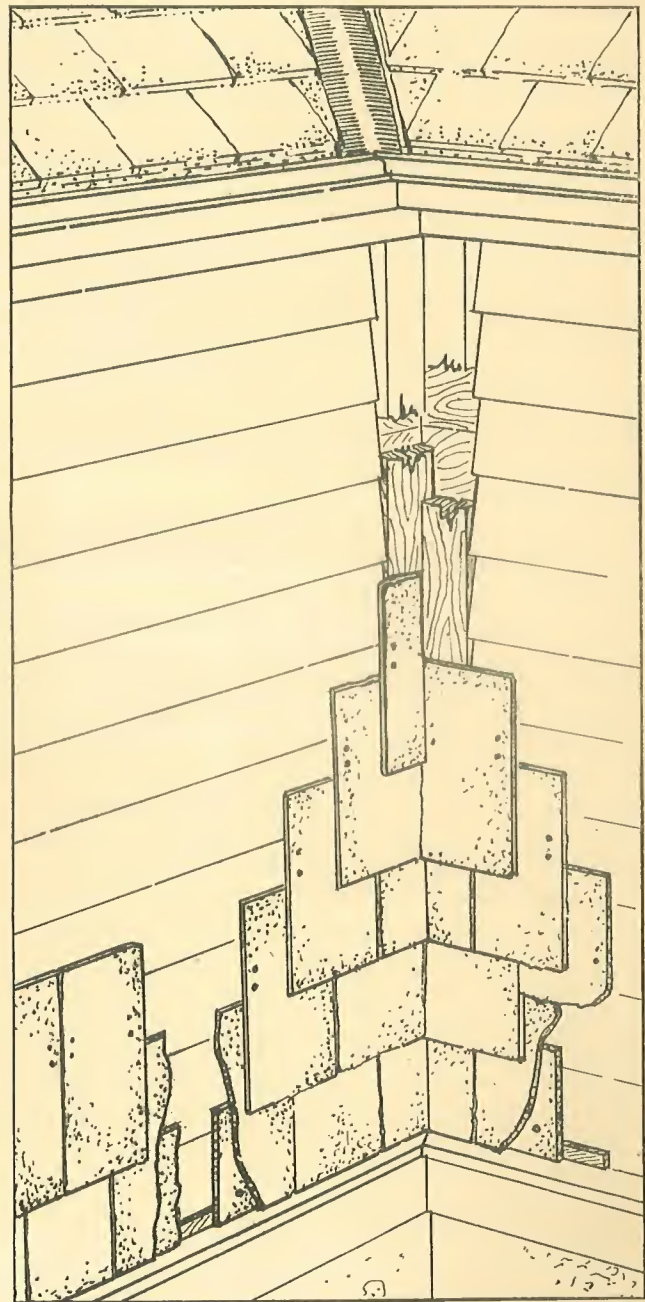


Figure 44—Showing inside corner construction—re-siding by the American Method

board and reset it after the Asbestos Shingles have been laid, so that it will cover them. The second, which is sometimes simpler, is to lay the shingles flush with the old frieze board and cover the joint with a moulding of the proper size and shape, as shown in Figure 43.

Chapter VIII

Siding—Hexagonal Method Shingles

Siding work done with hexagonal shingles is the same as roofing work. On new jobs, cover the sheathing with Johns-Manville Asbestos Felt—15 pounds or heavier—nailing it down through strips of lath where necessary. In siding work, the same as in roofing work, the use of several horizontal and vertical chalk lines will be found helpful. See Figure 45.

Water Table, Door, Window Construction

The proper construction at the water table is shown in Figure 45. This is the same construction as that used in roofing. Put in a cant strip to give the shingles proper cant and lay the eaves starters as shown. Then lay the eaves shingles just as in roofing work, inserting the copper storm anchors in the slots be-

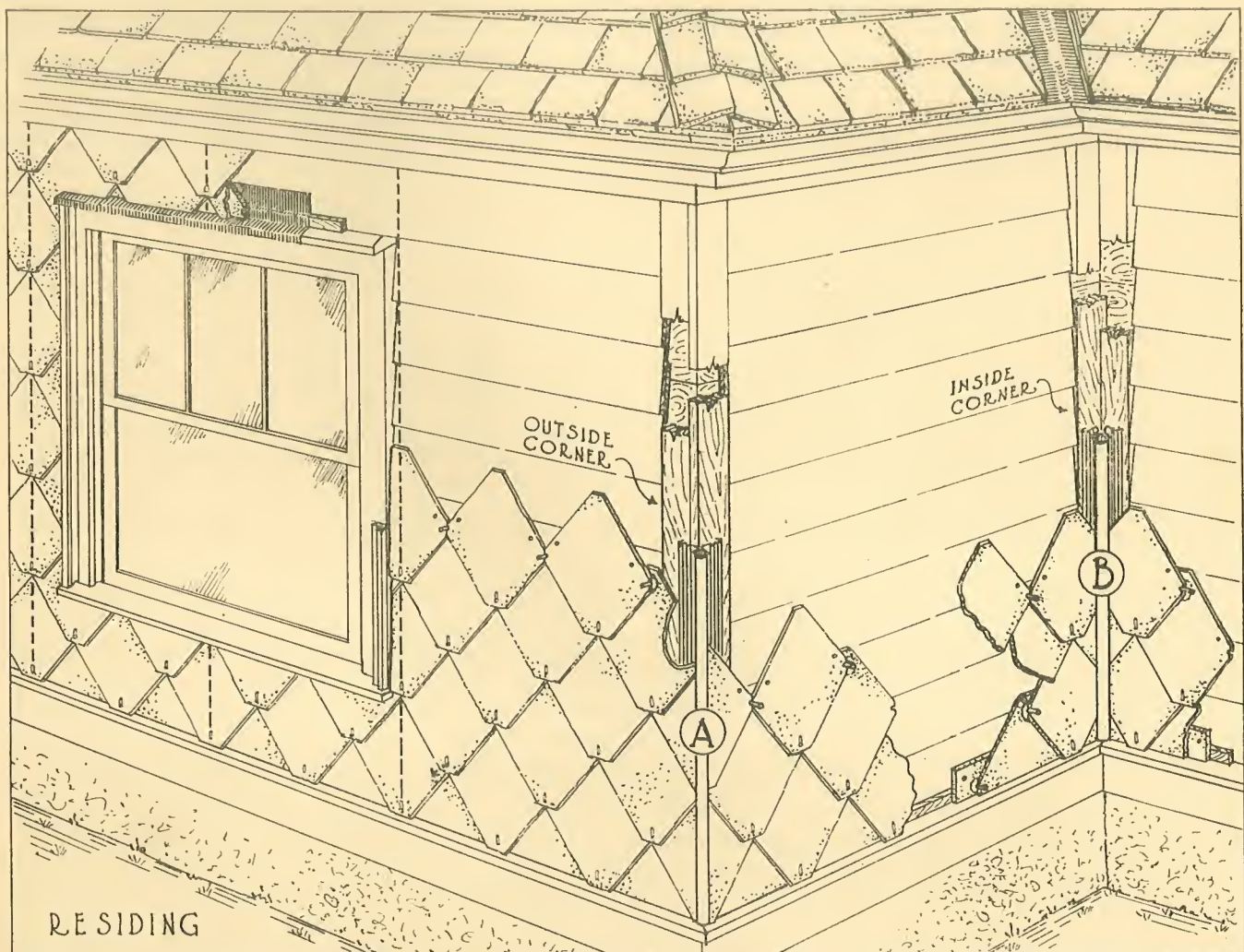


Figure 45—Siding by the Hexagonal Method—showing inside corner, outside corner and detail around window

tween each two eaves shingles. After the eaves shingles have been laid at the water table, proceed with the rest of the siding in the same manner as for roofing work.

Figure 45 shows the construction at the side and sill and head of window or door openings.

Cut off the shingles flush with the underside of the sill and cover the joint with a quarter round moulding. If open gaps are left because pieces of shingles, too small to handle, would be needed to fill them in, use row of eaves starters just under the sill and cover with the three quarter round moulding as described. Be sure to flash where necessary. Treat the shingles at the top of the opening in the same manner as the water table. The use of a sheet metal flashing at this point will usually be found necessary.

The construction at outside corners is shown in Figure 46. Nail up the copper corner

strip before laying the corner shingles and then fit the shingles into the slots on each side of it. It is also used at inside corners as shown in Figure 47.

Re-siding—Hexagonal Method Shingles

Re-siding is the same as siding on new work. The details for the work at the water table and around window and door openings are the same as those shown in Figure 46, using strips of moulding where required.

NOTE: The moulding at door and window openings is to be used only where the asbestos shingles extend beyond the outside casing. Inside and outside corners are handled as on new work. See Figures 46 and 47. The simplest construction at the frieze is to remove the old moulding and reset it after the shingles have been laid so that it will overlap them. If this cannot be done, lay the shingles flush with the old frieze and cover the joint with a moulding of the proper size and shape.

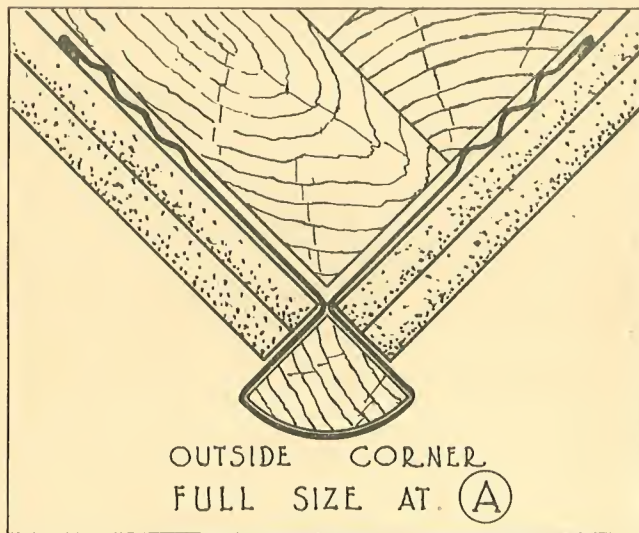


Figure 46—Outside corner construction

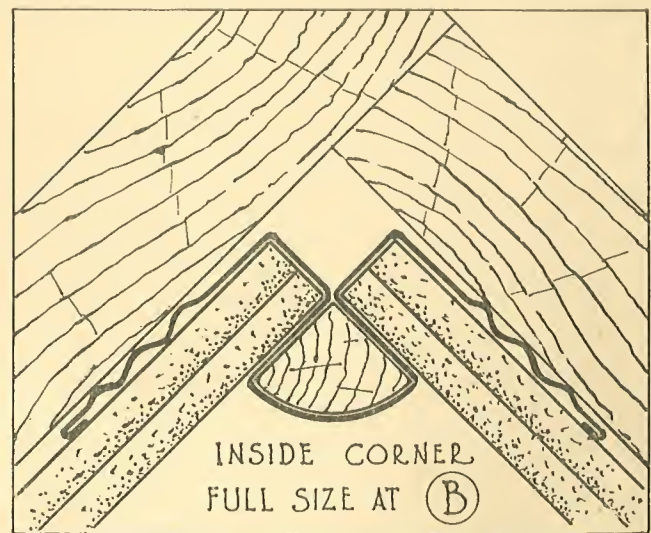


Figure 47—Inside corner construction

Chapter IX

Siding—Dutch Lap Method Shingles

When Dutch Lap Shingles are used for siding, the general details as for roofing are to be followed. On new jobs cover the sheathing with Johns-Manville Asbestos Felt—15 pounds or heavier—nailing it down through strips of lath where necessary. For residing, shingles are laid directly over the present siding.

The shingles are laid either from right to left or left to right depending on the shadow lines desired.

Figure 48 shows the construction details at the water table and the use of corner strips for inside and outside corners.

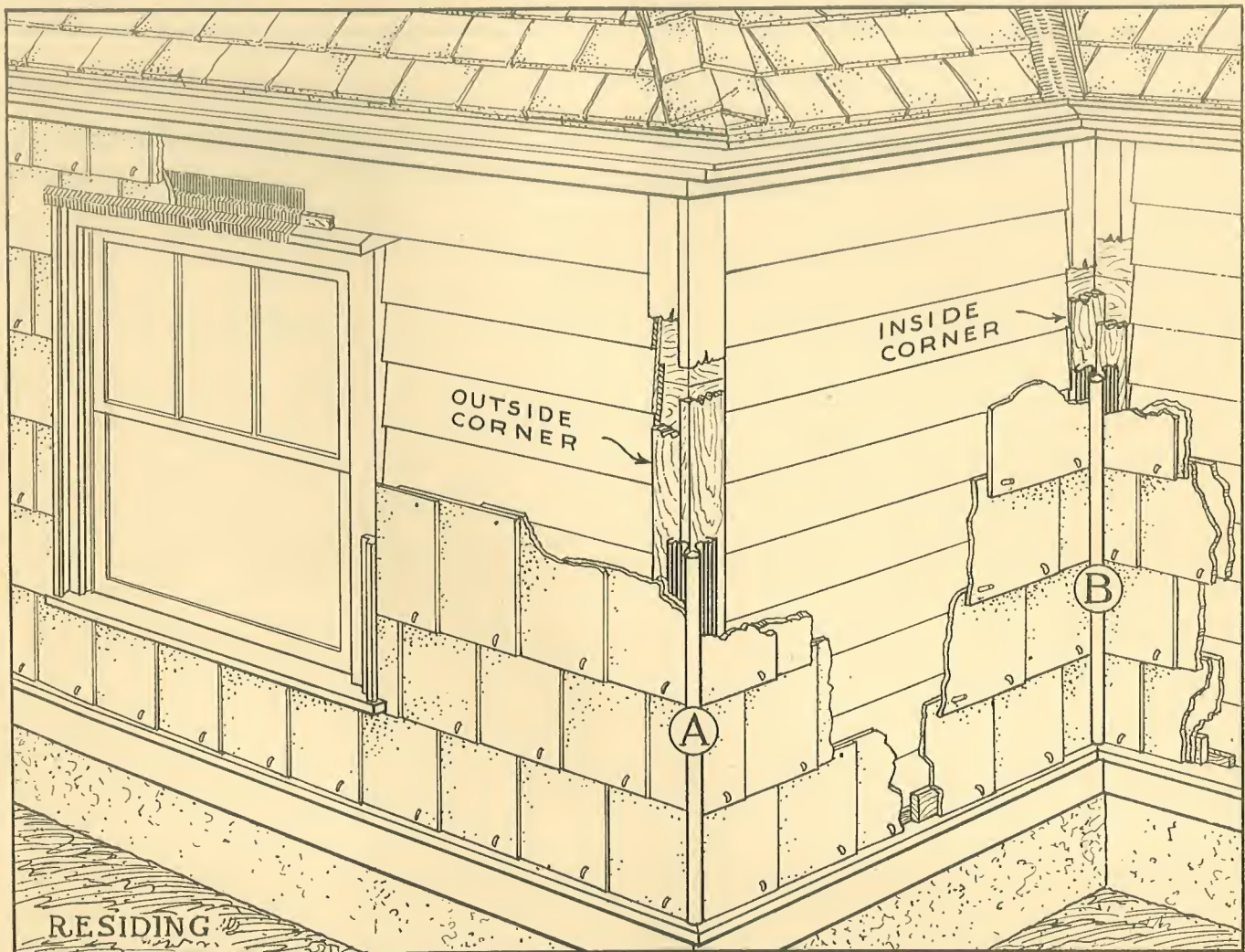


Figure 48—Siding by the Dutch Lap Method

Chapter X

Valleys and Flashings

Wherever Valleys and Flashings have been mentioned in this book they have been described as sheet metal. Many roof leaks can be traced to flashings and valleys—caused either by improper installation or the use of a metal which has rusted out or corroded.

Johns-Manville Rigid Asbestos Shingles make a permanent roof and it is false economy to use sheet metal if not equally permanent. Therefore, we recommend the use of permanent metals for all valleys and flashing work in connection with these shingles. The most common are copper, zinc, lead and aluminum. The proper valley and flashing constructions for each of these metals is essentially the same. If on any unusual constructions a difficult

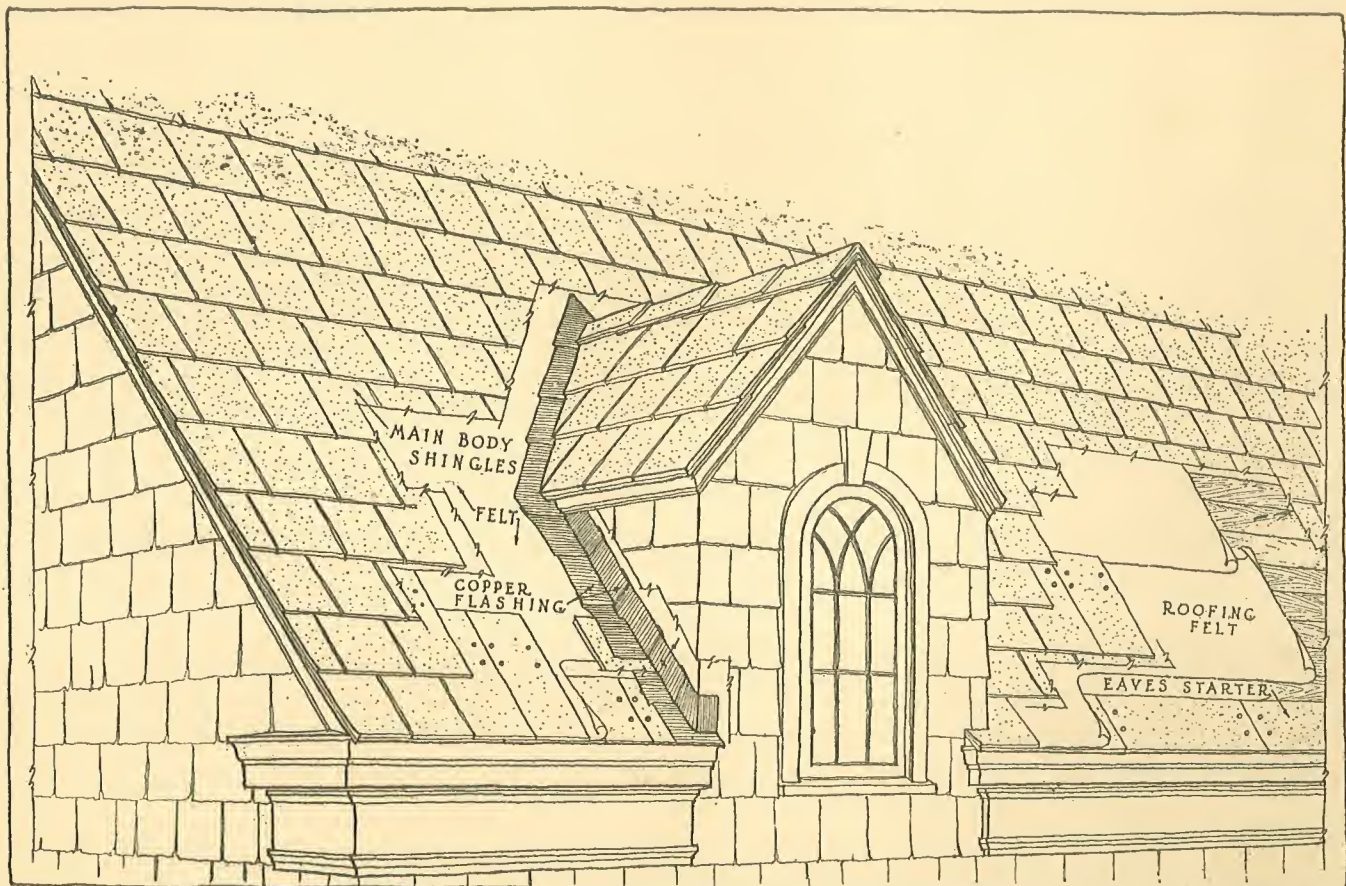
flashing job is required and one which is not fully specified in this book, we will be glad to submit details on request. We also take this opportunity of referring the contractor to the following for specific and detailed information on the use of these different metals in flashing work.

For Copper—The Copper and Brass Research Association, New York City.

For Zinc—The American Zinc Institute, New York City.

For Aluminum—The Aluminum Company of America, Pittsburgh.

For Lead—The National Lead Company, New York City.



Chapter XI

Figuring Roof Slopes and Roof Areas

Roof slopes are generally expressed in three different ways: in inches per foot, in pitch or in degree.

The table below shows how these three ways are related. From the table a roof slope given in any particular can be easily checked and expressed in the system you usually use.

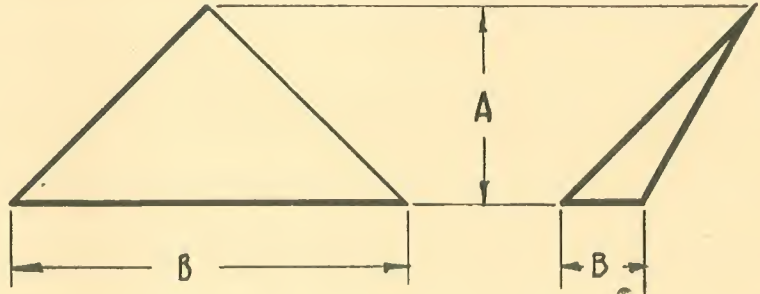
The fourth column shows the percent you must add to the plan area to determine the roof area for any given slope. For instance, a building 20 x 40 has a roof slope of 9 inches per foot. (No allowance is made for overhang). To get the roof area, take the plan area 800 square feet and add 25 percent—1,000 square feet.

Rise in Inches per Foot	Pitch	Degrees Approx.	Roof Area
2½"	5/48	12	2.15%
3"	1/8	14	3.1%
4"	1/6	18	5.4%
5"	5/24	23	8.3%
6"	1/4	27	11.8%
7"	7/24	30	15.8%
8"	1/3	34	20.2%
9"	3/8	37	25%
10"	5/12	40	30.2%
11"	11/24	42	35.6%
12"	1/2	45	41.4%
14"	7/12	49	53.7%
16"	2/3	53	66.7%
18"	3/4	56	80.3%
20"	5/6	59	94.3%
22"	11/12	61	108.8%
24"	1	63	123.6%

Figuring Odd Shaped Surfaces

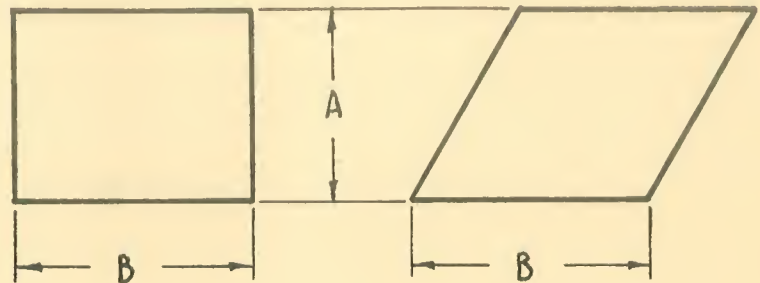
Area of a Triangle

To find the area of a triangle, multiply the Base (B) by half the Altitude (A).



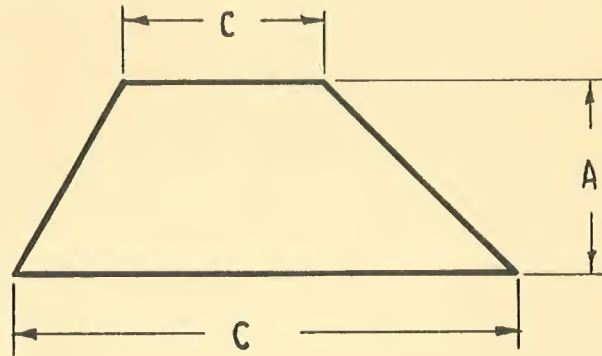
Area of a Parallelogram

To find the area of a parallelogram, multiply Base (B) by the Altitude (A).



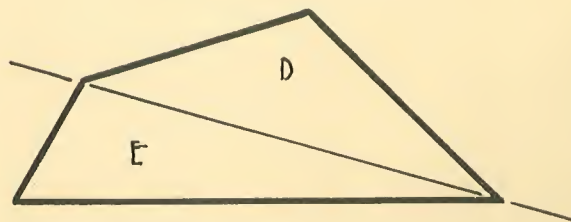
Area of a Trapezoid

To find the area of a trapezoid, multiply the Altitude (A) by half the sum of the parallel sides $\left(\frac{C+C}{2}\right)$



Area of a Trapezium

To find the area of a trapezium, divide into two triangles and find the area of the triangles.



MAIN BODY SHINGLES—HEXAGONAL METHOD No. 70 16" x 16"						STARTERS HEXAGONAL METHOD		
Squares	Bundles and Extra Shingles	Copper Storm Nails	Squares	Bundles and Extra Shingles	Copper Storm Nails	Lineal Feet	No. 17 Piece	No. 71 Piece
1	5 ¹²	87	26	150 ¹²	2262	5	4	3
2	11 ⁹	174	27	156 ⁹	2349	10	8	6
3	16 ⁶	261	28	162 ⁶	2436	15	12	9
4	23 ³	348	29	168 ³	2523	20	15	12
5	29	435	30	174	2610	25	19	15
6	34 ¹²	522	31	179 ¹²	2697	30	23	18
7	40 ⁹	609	32	195 ⁹	2784	35	27	21
8	46 ⁶	696	33	196 ⁶	2871	40	30	24
9	52 ³	783	34	197 ³	2958	45	34	27
10	58	870	35	203	3045	50	38	29
11	63 ¹²	957	36	208 ¹²	3132	55	42	32
12	69 ⁹	1044	37	214 ⁹	3219	60	45	35
13	75 ⁶	1131	38	220 ⁶	3306	65	49	38
14	81 ³	1218	39	226 ³	3393	70	53	41
15	87	1305	40	232	3480	75	57	44
16	92 ¹²	1392	41	237 ¹²	3567	80	60	47
17	98 ⁹	1479	42	243 ⁹	3654	85	64	50
18	104 ⁶	1566	43	249 ⁶	3741	90	68	53
19	110 ³	1653	44	255 ³	3828	95	72	56
20	116	1740	45	261	3915	100	75	58
21	121 ¹²	1827	46	266 ¹²	4002	105	79	61
22	127 ⁹	1914	47	272 ⁹	4089	110	83	64
23	133 ⁶	2001	48	278 ⁶	4176	115	87	67
24	139 ³	2088	49	284 ³	4263	120	90	70
25	145	2175	50	290	4350	125	94	73
						130	98	76
						135	102	79
						140	105	82
						150	113	87

MAIN BODY SHINGLES—HEXAGONAL METHOD No. 60 12" x 12"						STARTERS HEXAGONAL METHOD		
Squares	Bundles and Extra Shingles	Copper Storm Nails	Squares	Bundles and Extra Shingles	Copper Storm Nails	Lineal Feet	No. 17 Pieces	No. 61 Pieces
1	10 ¹⁰	160	26	277 ⁵	4160	5	4	4
2	21 ⁵	320	27	288	4320	10	8	8
3	32	480	28	298 ¹⁰	4480	15	12	12
4	42 ¹⁰	640	29	309 ⁵	4640	20	15	16
5	53 ⁵	800	30	320	4800	25	19	20
6	64	960	31	330 ¹⁰	4960	30	23	24
7	74 ¹⁰	1120	32	341 ⁵	5120	35	27	27
8	85 ⁵	1280	33	352	5280	40	30	31
9	96	1440	34	362 ¹⁰	5440	45	34	35
10	106 ¹⁰	1600	35	373 ⁵	5600	50	38	39
11	117 ⁵	1760	36	384	5760	55	42	43
12	128	1920	37	394 ¹⁰	5920	60	45	47
13	138 ¹⁰	2080	38	405 ⁵	6080	65	49	51
14	149 ⁵	2240	39	416	6240	70	53	54
15	160	2400	40	426 ¹⁰	6400	75	57	58
16	170 ¹⁰	2560	41	437 ⁵	6560	80	60	62
17	181 ⁵	2720	42	448	6720	85	64	66
18	192	2880	43	458 ¹⁰	6880	90	68	70
19	202 ¹⁰	3040	44	469 ⁵	7040	95	72	74
20	213 ⁵	3200	45	480	7200	100	75	77
21	224	3360	46	490 ¹⁰	7360	105	79	81
22	234 ¹⁰	3520	47	511 ⁵	7520	110	83	85
23	245 ⁵	3680	48	522	7680	115	87	89
24	256	3840	49	532 ¹⁰	7840	120	90	93
25	266 ¹⁰	4000	50	543 ⁵	8000	125	94	97

MAIN BODY SHINGLES AMERICAN METHOD No. 5 8" x 16"				STARTERS AMERICAN METHOD No. 51	
Squares	Bundles	Squares	Bundles	Lineal Feet	Pieces
1	13	26	338	5	4
2	26	27	351	10	7
3	39	28	364	15	10
4	52	29	377	20	14
5	65	30	390	25	17
6	78	31	403	30	20
7	91	32	416	35	24
8	104	33	429	40	27
9	117	34	442	45	30
10	130	35	455	50	34
11	143	36	468	55	37
12	156	37	481	60	40
13	169	38	494	65	44
14	182	39	507	70	47
15	195	40	520	75	50
16	208	41	533	80	54
17	221	42	546	85	57
18	234	43	559	90	60
19	247	44	572	95	64
20	260	45	585	100	67
21	273	46	598	105	70
22	286	47	611	110	74
23	299	48	624	115	77
24	312	49	637	120	80
25	325	50	650	125	84
				130	87
				135	90
				140	94
				145	97
				150	100

MAIN BODY SHINGLES—DUTCH LAP METHOD No. 40—17" x 17"				DUTCH LAP STARTERS No. 41	
Squares	Bundles and Extra Shingles	Squares	Copper Storm Nails	Lineal Feet	No. of Pieces
1	6 ¹	1	91	5	6
2	12 ²	2	182	10	11
3	18 ³	3	273	15	16
4	24 ⁴	4	364	20	22
5	30 ⁵	5	455	25	27
6	36 ⁶	6	546	30	33
7	42 ⁷	7	637	35	38
8	48 ⁸	8	728	40	43
9	54 ⁹	9	819	45	48
10	60 ¹⁰	10	910	50	53
11	66 ¹¹	11	1001	55	58
12	72 ¹²	12	1092	60	64
13	78 ¹³	13	1183	65	69
14	84 ¹⁴	14	1274	70	74
15	91	15	1365	75	79
16	97 ¹	16	1456	80	84
17	103 ²	17	1547	85	89
18	109 ³	18	1638	90	90
19	115 ⁴	19	1729	95	99
20	121 ⁵	20	1820	100	106
21	127 ⁶	21	1911	105	111
22	133 ⁷	22	2002	110	116
23	139 ⁸	23	2093	115	121
24	145 ⁹	24	2184	120	126
25	151 ¹⁰	25	2275	125	131
26	157 ¹¹	26	2366	130	137
27	163 ¹²	27	2457	135	142
28	169 ¹³	28	2548	140	147
29	175 ¹⁴	29	2639	145	152
30	176	30	2730	150	158
31	182 ¹	31	2821		
32	188 ²	32	2912		
33	194 ³	33	3003		
34	200 ⁴	34	3094		
35	206 ⁵	35	3185		
36	212 ⁶	36	3276		
37	218 ⁷	37	3367		
38	224 ⁸	38	3458		
39	230 ⁹	39	3549		
40	236 ¹⁰	40	3640		
41	242 ¹¹	41	3731		
42	248 ¹²	42	3822		
43	254 ¹³	43	3913		
44	260 ¹⁴	44	4004		
45	267	45	4095		
46	273 ¹	46	4186		
47	279 ²	47	4277		
48	285 ³	48	4368		
49	291 ⁴	49	4459		
50	297 ⁵	50	4550		

SIZES AND WEIGHTS MAIN BODY SHINGLES

	Hex. 70	Hex. 60	Dutch 40	Amer. 5	Amer. 10
Length.....	16"	12"	17"	16"	16"
Width.....	16"	12"	17"	8"	8"
Butt Thickness.....	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "
Shingles per Bundle.....	15	15	15	20	—
Bundles per Square.....	5 $\frac{1}{2}$	10 $\frac{2}{3}$	6 $\frac{1}{6}$	13	—
Shingles per Square.....	87	160	91	260	260
Weight per Square.....	295 to 330	310 to 345	365 to 395	520 to 570	460 to 500
Nails per Square.....	174	320	182	520	520
Weight of Nails per Square—New.....	1 lb.	1 $\frac{1}{2}$ lb.	1 lb.	2 $\frac{1}{2}$ lb.	2 $\frac{1}{2}$ lb.
Weight of Nails per Square—Re-roof.....	1 $\frac{1}{2}$ lb.	2 $\frac{1}{4}$ lb.	1 $\frac{1}{2}$ lb.	3 $\frac{1}{2}$ lb.	3 $\frac{1}{2}$ lb.
No. Storm Anchors per Square.....	87	160	91	—	—
Type of First Starters.....	No. 17	No. 17	No. 41	No. 51	No. 51
Type of Second Starters.....	No. 71	No. 61	—	—	—
Underwriter's Label.....	B	B	B	A	A

HIPS, RIDGES AND STARTERS

	Hip Shingle No. 18	Ridge Roll	Starters				
			17	71	61	51	41
Length.....	16"	16"	16"	—	—	18"	17"
Width.....	4 $\frac{1}{2}$ " to 5 $\frac{1}{4}$ "	—	4"	21"	15 $\frac{1}{2}$ "	9"	3"
Butt, Thickness.....	$\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "
Shingles per Bundle.....	—	33 per crate	10	15	15	10	10
Bundles per 100 linear feet.....	—	*	7 $\frac{1}{2}$	3 $\frac{3}{16}$	5 $\frac{7}{16}$	6 $\frac{7}{10}$	10 $\frac{3}{10}$
Shingles per 100 linear feet.....	342	93	75	58	77	67	106
Weight per 100 linear feet.....	460 to 480 lbs.	4 lbs. each	100	122 to 135	95 to 105	210	85
Nails per 100 linear feet.....	684	*	150	116	154	134	106
Weight of nails per 100 linear feet—new.....	3 lbs.	*	$\frac{3}{4}$ lbs.	$\frac{1}{2}$ lbs.	$\frac{3}{4}$ lbs.	$\frac{5}{8}$ lbs.	$\frac{1}{2}$ lbs.
Weight of nails per 100 linear feet—re-roof.....	3 lbs.	*	1 lb.	$\frac{3}{4}$ lb.	1 lb.	1 lb.	$\frac{3}{4}$ lb.

* 93 nails and 93 ridge roll fasteners.

HEADLAP—SIDELAP—EXPOSURE

	Hex 70	Hex. 60	Dutch 40	Amer. 5	Amer. 10
Headlap.....	—	—	3"	2"	2"
Sidelap.....	—	—	5 $\frac{2}{3}$ "	—	—
Exposure.....	13" x 13"	9 $\frac{1}{2}$ " x 9 $\frac{1}{2}$ "	14" x 11 $\frac{1}{3}$ "	7"	7"

230
6200

4) 800 6.00
6.63

Typical Estimating Sheet

JOHNS-MANVILLE ASBESTOS SHINGLE ESTIMATE NO.

Send estimate to.....	Address.....	Meas. by.....	Date.....
Owner	Address.....	No. of plans.....	
Location of job.....		Date of plans.....	
Over new sheathing or old roofing.....		Revisions	

REMARKS

.....

.....

.....

Sqs. No.....	Asbestos Shingles.....	at.....
lin. ft. No.	and.....	starters.....
lin. ft. Asbestos Ridge Roll.....		at.....
lin. ft. Valley Lining	width.....	at.....
lin. ft. Base Flashing.....	width.....	at.....
lin. ft. Cap Flashing.....	width.....	at.....
lbs. Galv. Shingle Nails.....	length.....	at.....
pcs. Copper Storm Nails.....		at.....
pcs. Copper Ridge Roll Fasteners.....		at.....
lbs. Asbestos Roof Putty.....		at.....
sqs.....	Brand Felt.....	at.....
lin. ft. Gable Moulding		at.....
lin. ft. Wood Ridge and Hip Pole.....		at.....
Labor		
Cartage		
Insurance		
	Total Cost	
	Profit	
	Quote	

Suggestion for Proposal Form

JOHNS-MANVILLE ASBESTOS SHINGLE PROPOSAL NO.

DATE

TO

Dear Sir:

We propose to furnish and apply the following material on.....

located at

for the sum of.....

complete, all in accordance with the manufacturer's specifications and under the following terms and conditions:

- sqs. Johns-Manville Asbestos Shingles No..... Color.....
- lin. ft. " " " Starters No..... and No.....
- " " " " Ridge Roll.....
- sqs. Brand Felt.....
- lin. ft. Wood Ridge and Hip Pole to receive Ridge Roll
- " " Valley Lining Width
- " " Flashing
- lbs. Galvanized Asbestos Shingle Nails..... Length
- pcs. Copper Storm Nails
- " " Ridge Roll Fasteners
- lbs. Asbestos Roof Putty, Color.....

If original roof plan, upon which our price is based, is altered, necessitating extra labor and materials, all expense attendant thereto shall be borne by you.

No credit nor allowance shall be made for alterations, unless such credit or allowance has been agreed to by us in writing before the work in question is performed.

We shall not be responsible for damage or delay due to strikes, fires, accidents or other causes beyond our reasonable control.

All damage to roofing after completion, caused by others, will be repaired by us and charged to you at schedule rates.

We shall not be responsible for any damages or expenses resulting from specifications not conforming to the requirements of the law.

Terms of Payment: Fifty per cent of contract price shall be paid upon delivery of materials to site of job. Balance upon completion of contract.

There are no premises, agreements nor understandings not expressed in this proposal and this writing constitutes the entire contract.

This proposal is subject to..... days' acceptance and when accepted by you and approved by this company, shall become a contract effective under the laws of the State of.....

..... and shall be so construed.

Accepted:

Respectfully submitted,
(Firm Name)

By

Approved, 192.....
(Firm Name)

By

Ridge Roll 34-26-26-14-26-14-18-18-19-4-19-19-15-16-16-2

MEMORANDA

Front Porch 13x35

~~29~~

8-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100

34-26-19-13-27-31-32-4
13-25-13-7-36-20-28-10

23x34

26x44

16x13

18x13

18x26

6x19

6x19

19x10

19x10

14x19

25x9

13x2

Back Porch

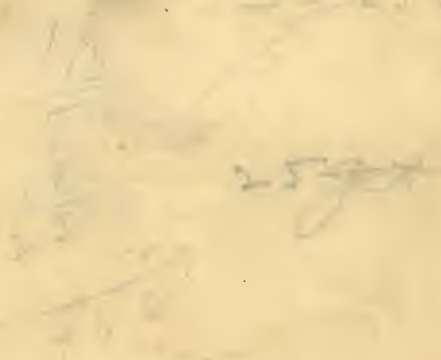
11x24

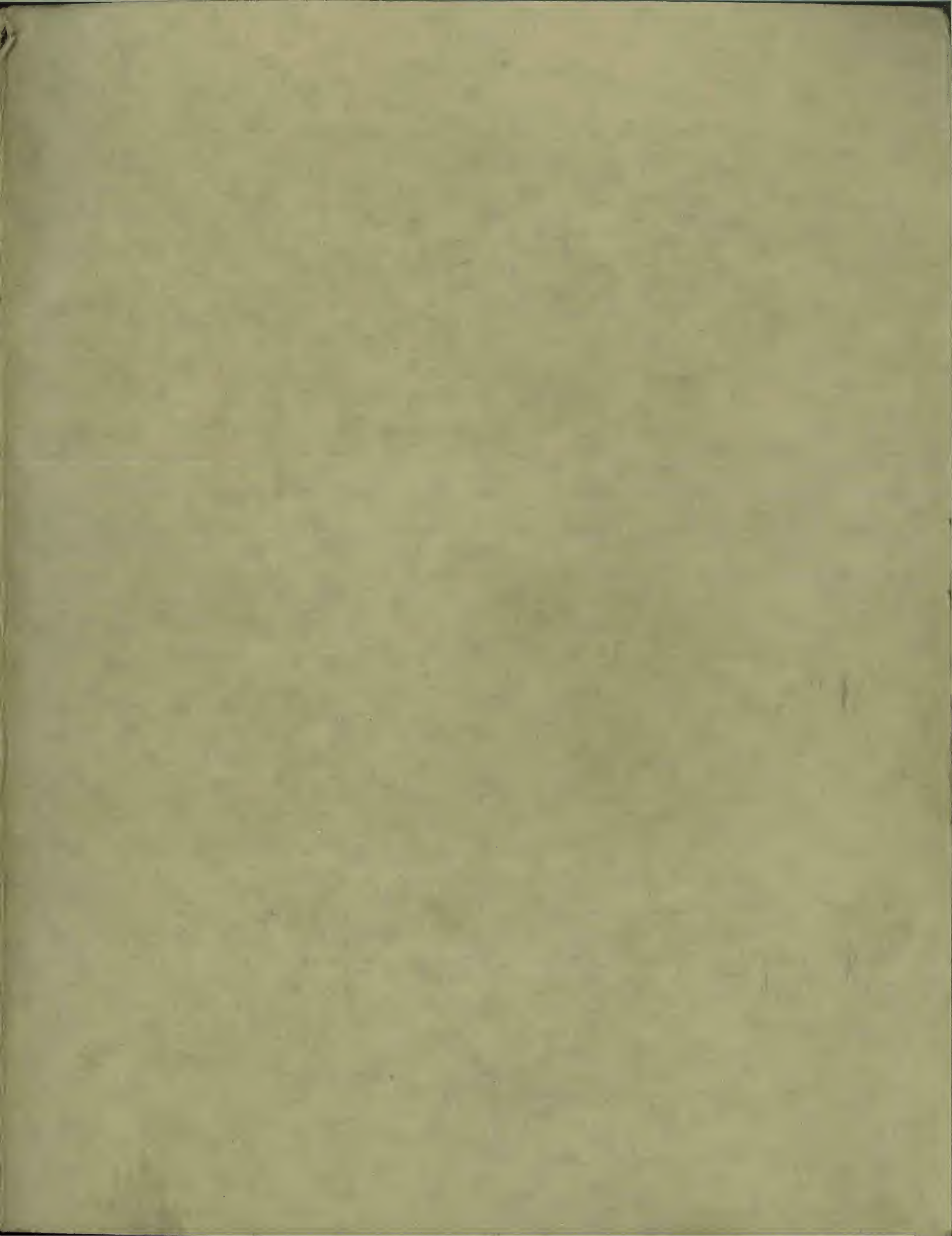
8 1/2 Valley

10	13
5	19
13	22
4	19

415
41
506

925
36
2355
+175
26100
6200
32300
3510
35850





How to Apply
Johns-Manville
RIGID ASBESTOS
SHINGLES



Johns-Manville
CORPORATION